

AD-A108 407

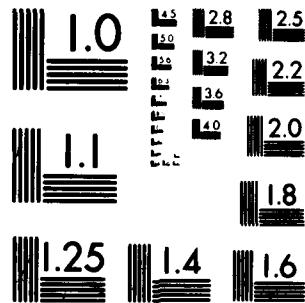
AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OH SCHOOL--ETC F/G 5/9  
JOB SATISFACTION AND CIVILIAN AUDITOR TURNOVER WITHIN THE AIR F--ETC(U)  
JUN 81 G E HANBY; B K ZIMMERMAN  
AFIT-LSSR-5-81

UNCLASSIFIED

NL

1-3





MICROCOPY RESOLUTION TEST CHART  
NATIONAL BUREAU OF STANDARDS 1963 A<sub>1</sub>

6  
AD A108407



100



AD A108407

Accession For	
NTIS GRA&I	<input checked="" type="checkbox"/>
DTIC TAB	<input type="checkbox"/>
Unannounced	<input type="checkbox"/>
Justification	
By _____	
Distribution/	
Availability Codes	
Dist	Avail and/or Special
A	

JOB SATISFACTION AND CIVILIAN  
AUDITOR TURNOVER WITHIN THE  
AIR FORCE AUDIT AGENCY

George E. Hanby, GS-12  
Bruce K. Zimmerman, GS-12

LSSR 5-81

DTIC  
ELECTE  
DEC 11 1981  
S D D

**DISTRIBUTION STATEMENT A**  
Approved for public release;  
Distribution Unlimited

The contents of the document are technically accurate, and no sensitive items, detrimental ideas, or deleterious information are contained therein. Furthermore, the views expressed in the document are those of the author(s) and do not necessarily reflect the views of the School of Systems and Logistics, the Air University, the Air Training Command, the United States Air Force, or the Department of Defense.

**AFIT RESEARCH ASSESSMENT**

The purpose of this questionnaire is to determine the potential for current and future applications of AFIT thesis research. Please return completed questionnaires to: AFIT/LSH, Wright-Patterson AFB, Ohio 45433.

1. Did this research contribute to a current Air Force project?

- a. Yes                      b. No

2. Do you believe this research topic is significant enough that it would have been researched (or contracted) by your organization or another agency if AFIT had not researched it?

- a. Yes                      b. No

3. The benefits of AFIT research can often be expressed by the equivalent value that your agency received by virtue of AFIT performing the research. Can you estimate what this research would have cost if it had been accomplished under contract or if it had been done in-house in terms of manpower and/or dollars?

a. Man-years \_\_\_\_\_ \$ \_\_\_\_\_ (Contract).

b. Man-years \_\_\_\_\_ \$ \_\_\_\_\_ (In-house).

4. Often it is not possible to attach equivalent dollar values to research, although the results of the research may, in fact, be important. Whether or not you were able to establish an equivalent value for this research (3 above), what is your estimate of its significance?

- a. Highly                      b. Significant    c. Slightly                      d. Of No  
Significant                      Significant                      Significance

5. Comments:

\_\_\_\_\_  
Name and Grade

\_\_\_\_\_  
Position

\_\_\_\_\_  
Organization

\_\_\_\_\_  
Location

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER LSSR 5-81	2. GOVT ACCESSION NO. AD-A20 8407	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) JOB SATISFACTION AND CIVILIAN AUDITOR TURNOVER WITHIN THE AIR FORCE AUDIT AGENCY		5. TYPE OF REPORT & PERIOD COVERED Master's Thesis
		6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(s) George E. Hanby, GS-12 Bruce K. Zimmerman, GS-12		8. CONTRACT OR GRANT NUMBER(s)
9. PERFORMING ORGANIZATION NAME AND ADDRESS School of Systems and Logistics Air Force Institute of Technology, WPAFB OH		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
11. CONTROLLING OFFICE NAME AND ADDRESS Department of Communication and Humanities AFIT/LSH, WPAFB OH 45433		12. REPORT DATE June 1981
		13. NUMBER OF PAGES 207
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)		15. SECURITY CLASS. (of this report) UNCLASSIFIED
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE
16. DISTRIBUTION STATEMENT (of this Report) Approved for public release; distribution unlimited.		
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report) Air Force Institute of Technology (ATC) Wright-Patterson AFB, OH 45433 7 AUG 1981 FREDERIC C LYNCH, Major, USAF Director of Public Affairs		
18. SUPPLEMENTARY NOTES APPROVED FOR PUBLIC RELEASE APR 1981. Frederic C. Lynch		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) Job satisfaction; Turnover; Auditor; Air Force Audit Agency; Need satisfaction		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Thesis Chairman: William H. Hendrix, Lt Col, USAF		

DD FORM 1 JAN 73 1473 EDITION OF 1 NOV 65 IS OBSOLETE

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE(When Data Entered)

The executive managers of the Air Force Audit Agency (AFAA) have identified the turnover of the civilian audit staff as a primary area of managerial concern. This research uses a conceptual model as the medium through which elements of job satisfaction are related to turnover. A survey questionnaire was developed for this study and administered to all AFAA civilian auditors. Responses to the questions were analyzed using factor analysis, multiple linear regression, and comparative analyses. The result of these analyses was a synthesized model that identifies seven significant determinants of job satisfaction for civilian auditors, the variable "opportunity" intervening between satisfaction and turnover, and two demographic variables that significantly correlate to the propensity to leave the organization. A regression equation is presented which indicates that Audit Agency management could most significantly influence job satisfaction through psychological needs of employees, promotion opportunities, and characteristics of supervisors. Comparative analyses of the components of psychological needs suggests that in the categories termed "esteem need" and "security need" AFAA civilian auditors have relatively higher need deficiency scores than their counterparts in similar job frameworks. Observed motivating potential scores indicate that job enrichment could meet with favorable results.

B UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE(When Data Entered)



LSSR 5-81

**JOB SATISFACTION AND CIVILIAN  
AUDITOR TURNOVER WITHIN THE  
AIR FORCE AUDIT AGENCY**

**A Thesis**

**Presented to the Faculty of the School of Systems and Logistics  
of the Air Force Institute of Technology**

**Air University**

**In Partial Fulfillment of the Requirements for the  
Degree of Master of Science in Logistics Management**

**By**

**George E. Hanby, MBA, CPA  
GS-12, AFPA**

**Bruce K. Zimmerman, BS  
GS-12, AFPA**

**June 1981**

**Approved for public release;  
distribution unlimited**

This thesis, written by

Mr. George E. Hanby

and

Mr. Bruce K. Zimmerman

has been accepted by the undersigned on behalf of the faculty of the School of Systems and Logistics in partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE IN LOGISTICS MANAGEMENT

DATE: 17 June 1981

  
COMMITTEE CHAIRMAN

### ACKNOWLEDGEMENTS

The authors express gratitude and appreciation to those persons who were instrumental in providing ideas and guidance in the development and completion of this thesis. Special acknowledgement goes to Mr. J. H. Stolarow, Auditor General of the Air Force, and Colonel D. L. Rans, Deputy Auditor General of the Air Force, for their interest, encouragement, and support of this project. Special thanks goes to Lieutenant Colonel John Tracy for his assistance in gaining access to data and administration of the survey questionnaire.

The support and encouragement of our wives, Deborah and Patricia, has been greatly appreciated. Their patience and sacrifice were as important as any element in the completion of this thesis.

## TABLE OF CONTENTS

	Page
ACKNOWLEDGEMENTS . . . . .	iii
LIST OF TABLES . . . . .	xi
LIST OF FIGURES . . . . .	xviii
 CHAPTER	
I. INTRODUCTION . . . . .	1
Overview . . . . .	1
The Concept of Turnover . . . . .	1
Definition . . . . .	2
Measurement . . . . .	2
Impact . . . . .	6
II. LITERATURE REVIEW . . . . .	7
Introduction . . . . .	7
Concepts of Turnover . . . . .	8
Porter and Steers . . . . .	9
Price . . . . .	10
Blackburn and Johnson/ Gulick and Laakman . . . . .	13
The Factors of Turnover . . . . .	16
Correlates . . . . .	16
Age . . . . .	16
Tenure . . . . .	17
Education . . . . .	17
Sex . . . . .	18
Ethnic Origin . . . . .	18

# CHAPTER

# Page

Determinants . . . . .	20
Adversary Role . . . . .	20
Pay . . . . .	21
Promotion . . . . .	22
Peer Group Integration . .	22
Role Clarity . . . . .	23
Job Autonomy and Responsibility . . . . .	24
Task Repetitiveness . . . .	25
Supervisory Style . . . . .	25
Similarity of Job Content with Vocational Interest . . . . .	26
Organizational Commitment . . . . .	26
Overall Reaction to Job Content . . . . .	27
Intervening Variables . . . . .	27
Satisfaction . . . . .	28
Met Expectations . . . . .	28
Opportunity . . . . .	29
A Conceptual Model . . . . .	30
Problem Statement . . . . .	32
Research Objectives . . . . .	32
Research Questions . . . . .	33

CHAPTER	Page
III. RESEARCH DESIGN AND METHODOLOGY . . . .	37
Introduction . . . . .	37
Data Gathering Plan . . . . .	37
Data Collection	
Instrument . . . . .	37
Survey Bias . . . . .	38
Instrument Validity and Reliability . . . . .	38
Description of the Population . . . . .	38
Variable Definition and Measurement . . . . .	38
Expressed Career Intent . . . . .	38
Intervening Variables . . . . .	39
Satisfaction . . . . .	39
Opportunity . . . . .	39
Determinant Variables . . . . .	40
Adversary Role . . . . .	40
Pay . . . . .	41
Promotion . . . . .	42
Peer Group Integration . . . . .	42
Role Clarity . . . . .	44
Job Autonomy and Responsibility . . . . .	44

## CHAPTER

Page

Task Repetitiveness . . . . .	45
Supervisory Style . . . . .	46
Organizational Commitment . . . . .	47
Job Content . . . . .	48
Similarity of Job Content with Vocational Interests . . . . .	49
Correlates . . . . .	50
Need Satisfaction . . . . .	50
Survey Instrument Responses . . . . .	51
Data Analysis . . . . .	52
Factor Analysis . . . . .	52
Reliability . . . . .	56
Statistical Method . . . . .	57
Regression Coefficient, Beta (B) . . . . .	58
Coefficient of Determination ( $R^2$ ) . . . . .	59
Multiple Linear Regression . . . . .	59
Validation of Equation . . . . .	60
Analytical Method . . . . .	60
Assumptions . . . . .	61

CHAPTER		Page
IV.	RESULTS AND ANALYSIS . . . . .	62
	Overview . . . . .	62
	Description of the Population . . . . .	62
	Factor Analysis . . . . .	65
	Number of Factors . . . . .	72
	Reliability . . . . .	72
	Factors . . . . .	74
	Factor 1:	
	Supervisory Style . . . . .	74
	Factor 2:	
	Psychological Needs . . . . .	75
	Factor 3:	
	Organizational Commitment . . . . .	75
	Factor 4:	
	Promotion . . . . .	76
	Factor 5:	
	Job Autonomy . . . . .	77
	Factor 6:	
	Peer Group Integration . . . . .	77
	Factor 7:	
	Task Repetitiveness . . . . .	78
	Factor 8:	
	Skill Task Variety . . . . .	78
	Factor 9:	
	Opportunity . . . . .	79



CHAPTER		Page
	Factor 10: Job Stability . . . . .	79
	Factor 11: Work Environment . . . . .	80
	Factor 12: Adversary Position . . . . .	81
	Regression Analysis . . . . .	81
	Overview . . . . .	81
	Results of Regression Analysis . . . . .	84
	Test of Hypotheses . . . . .	87
	Analytical Analysis . . . . .	91
	The Data-Gathering Model . . . . .	91
	Implications of Analysis . . . . .	98
V.	DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS . . . . .	100
	Discussion . . . . .	100
	Conclusions . . . . .	101
	Determinants of Job Satisfaction . . . . .	101
	Psychological Needs . . . . .	102
	Promotion . . . . .	103
	Supervisory Style . . . . .	103
	Skill Task Variety . . . . .	103
	Peer Group Integration . . . . .	104
	Adversary Position . . . . .	104
	Work Environment . . . . .	105

CHAPTER	Page
Intervening Variable - Opportunity . . . . .	105
Correlate Variables . . . . .	106
Age . . . . .	106
Tenure . . . . .	106
Recommendations . . . . .	107
Model Validation . . . . .	107
Tenure . . . . .	108
Questionnaire . . . . .	108
Adversary Role Understanding . .	109
Capacity to Accept Change . . .	110
Potential Field Application . .	110
APPENDICES . . . . .	112
A. MISSION AND ORGANIZATIONAL STRUCTURE OF THE AIR FORCE AUDIT AGENCY . . . . .	113
B. JOB SATISFACTION SURVEY QUESTIONNAIRE . . .	130
C. ANALYTICAL ANALYSIS DATA . . . . .	143
D. ORGANIZATIONAL DIAGNOSTIC ANALYSIS . . . .	186
SELECTED BIBLIOGRAPHY . . . . .	204
A. REFERENCES CITED . . . . .	205
B. RELATED SOURCES . . . . .	207

# LIST OF TABLES

Table		Page
1.	Civilian Auditor Accessions/Separations for the Period October 1977 through September 1980 . . . . .	4
2.	Functional Job Title . . . . .	66
3.	Number of Personnel Supervised . . . . .	66
4.	General Schedule (GS) Grade . . . . .	67
5.	General Schedule Step . . . . .	67
6.	Tenure with AFAA in Months . . . . .	68
7.	Tenure in Position in Months . . . . .	68
8.	Age (Years) . . . . .	69
9.	Education . . . . .	69
10.	Sex of Respondent . . . . .	70
11.	Ethnic Origin . . . . .	70
12.	Marital Status . . . . .	71
13.	Spouse Employed Outside the Home . . . . .	71
14.	Questionnaire Factor Analysis . . . . .	73
15.	Factor 1 - Supervisory Style . . . . .	74
16.	Factor 2 - Psychological Needs . . . . .	75
17.	Factor 3 - Organizational Commitment . . . . .	76
18.	Factor 4 - Promotion . . . . .	76
19.	Factor 5 - Job Autonomy . . . . .	77
20.	Factor 6 - Peer Group Integration . . . . .	78

Table		Page
21.	Factor 7 - Task Repetitiveness . . . . .	78
22.	Factor 8 - Skill Task Variety . . . . .	79
23.	Factor 9 - Opportunity . . . . .	79
24.	Factor 10 - Job Stability . . . . .	80
25.	Factor 11 - Work Environment . . . . .	80
26.	Factor 12 - Adversary Position . . . . .	81
27.	Significant Variables Resulting From Regression Analysis With Organizational Commitment As The Dependent Variable . . . . .	85
28.	Variation Explained ( $R^2$ ) by the Regression Equation . . . . .	86
29.	Schedule of Need Deficiency Scores . . . . .	95
30.	Comparative Measures of Job Satisfaction by Individual Question . . . . .	96
31.	Select Need Deficiency Scores . . . . .	97
32.	Auditor General and Staff Directorates Personnel by Position . . . . .	119
33.	Directorate of Service-Wide Systems Personnel by Position . . . . .	120
34.	Directorate of Acquisitions and Logistics Systems Personnel by Position . . . . .	121
35.	Eastern Region Personnel by Position . . . . .	122
36.	Western Region Personnel by Position . . . . .	123
37.	Recapitulation of AFAA Personnel by Position . . . . .	124

Table		Page
38.	Comparison of Civilian/Military Positions and Fill Rates . . . . .	125
39.	Recapitulation of Civilian Personnel by Grade by Directorate/Region . . . . .	127
40.	Recapitulation of Military Officer Personnel by Rank by Directorate/Region . . . . .	128
41.	Recapitulation of Military Enlisted Personnel by Rank by Directorate/Region . . . . .	129
42.	Need Satisfaction Scores of AFAA Civilian Auditors Compared to Internal Auditors . . . . .	145
43.	Need Satisfaction Scores of AFAA Civilian Auditors Compared to Mid-Level Accountants - I . . . . .	146
44.	Need Satisfaction Scores of AFAA Civilian Auditors Compared to Mid-Level Accountants - II . . . . .	147
45.	Need Satisfaction Scores of AFAA Civilian Auditors Compared to Mid-Level Managers . . . . .	148
46.	Need Satisfaction Scores of AFAA Civilian Auditors Compared to Partner in Chartered Accountant Firm or Sole Practitioner . . . . .	149
47.	Need Satisfaction Scores of AFAA Civilian Auditors Compared to Employees in Chartered Accountant Firms . . . . .	150
48.	Need Satisfaction Scores of AFAA Civilian Auditors Compared to Chartered Accountants Employed by Government or Other Public Institutions . . . . .	151

Table		Page
49.	Need Satisfaction Scores of AFAA Civilian Auditors Compared to Chartered Accountants Employed in Manufacturing . . . . .	152
50.	Need Satisfaction Scores of AFAA Civilian Auditors Compared to Chartered Accountants Employed in Financial Institutions . . . . .	153
51.	Need Satisfaction Scores of AFAA Civilian Auditors Compared to Chartered Accountants Employed in Retail Institutions . . . . .	154
52.	Need Satisfaction Scores of AFAA Civilian Auditors Compared to Chartered Accountants Employed by Other Institutions . . . . .	155
53.	Frequency of Security Need Satisfaction Scores . . . . .	156
54.	Frequency of Social Need Satisfaction Scores . . . . .	157
55.	Frequency of Esteem Need Satisfaction Scores . . . . .	158
56.	Frequency of Autonomy Need Satisfaction Scores . . . . .	159
57.	Frequency of Self-Actualization Need Satisfaction Scores . . . . .	160
58.	Cross Tabulation of Security Need Responses by Respondent's Age . . . . .	161
59.	Cross Tabulation of Security Need Responses by Respondent's Sex . . . . .	162
60.	Cross Tabulation of Security Need Responses by Respondent's Ethnic Origin . . . . .	163

Table		Page
61.	Cross Tabulation of Security Need Responses by Respondent's GS Grade . . . . .	164
62.	Cross Tabulation of Security Need Responses by Respondent's Functional Job Title . . . . .	165
63.	Cross Tabulation of Social Need Responses by Respondent's Age . . . . .	166
64.	Cross Tabulation of Social Need Responses by Respondent's Sex . . . . .	167
65.	Cross Tabulation of Social Need Responses by Respondent's Ethnic Origin . . . . .	168
66.	Cross Tabulation of Social Need Responses by Respondent's GS Grade . . . . .	169
67.	Cross Tabulation of Social Need Responses by Respondent's Functional Job Title . . . . .	170
68.	Cross Tabulation of Esteem Need Responses by Respondent's Age . . . . .	171
69.	Cross Tabulation of Esteem Need Responses by Respondent's Sex . . . . .	172
70.	Cross Tabulation of Esteem Need Responses by Respondent's Ethnic Origin . . . . .	173
71.	Cross Tabulation of Esteem Need Responses by Respondent's GS Grade . . . . .	174
72.	Cross Tabulation of Esteem Need Responses by Respondent's Functional Job Title . . . . .	175
73.	Cross Tabulation of Autonomy Need Responses by Respondent's Age . . . . .	176

Table		Page
74.	Cross Tabulation of Autonomy Need Responses by Respondent's Sex . . . . .	177
75.	Cross Tabulation of Autonomy Need Responses by Respondent's Ethnic Origin . . . . .	178
76.	Cross Tabulation of Autonomy Need Responses by Respondent's GS Grade . . . . .	179
77.	Cross Tabulation of Autonomy Need Responses by Respondent's Functional Job Title . . . . .	180
78.	Cross Tabulation of Self-Actualization Need Responses by Respondent's Age . . . .	181
79.	Cross Tabulation of Self-Actualization Need Responses by Respondent's Sex . . . .	182
80.	Cross Tabulation of Self-Actualization Need Responses by Respondent's Ethnic Origin . . . . .	183
81.	Cross Tabulation of Self-Actualization Need Responses by Respondent's GS Grade . . . . .	184
82.	Cross Tabulation of Self-Actualization Need Responses by Respondent's Functional Job Title . . . . .	185
83.	Productivity Response Frequency . . . . .	190
84.	Climate Response Frequency . . . . .	191
85.	Management/Supervision Response Frequency . . . . .	192
86.	Autonomous Control Response Frequency . .	193
87.	Supervisor Assistance Response Frequency . . . . .	194
88.	Motivating Potential Score Response Frequency . . . . .	195



Table		Page
89.	Cross Tabulation of MPS Responses by Respondent's Age . . . . .	196
90.	Cross Tabulation of MPS Responses by Respondent's Sex . . . . .	197
91.	Cross Tabulation of MPS Responses by Respondent's Ethnic Origin . . . . .	198
92.	Cross Tabulation of MPS Responses by Respondent's GS Grade . . . . .	199
93.	Cross Tabulation of MPS Responses by Respondent's Functional Job Title . . . . .	200

## LIST OF FIGURES

Figure		Page
1.	Blackburn and Johnson's Model of Porter and Steers' Conceptual Framework . . . . .	11
2.	Price Turnover Model . . . . .	12
3.	Blackburn and Johnson's Synthesized Model . . . . .	14
4.	Gulick and Laakman's Operationalized Model . . . . .	15
5.	Conceptual Model . . . . .	31
6.	Model Developed from Factor Analysis . . . . .	82
7.	Synthesized Model . . . . .	88
8.	AFAA Organization Chart . . . . .	118
9.	AFAA Civilian Job Diagnostic Profile . . . . .	201
10.	AFAA Climate/Productivity Profile . . . . .	202
11.	AFAA Managerial Style Profile . . . . .	203

## CHAPTER I

### INTRODUCTION

#### Overview

Research involving the study of job satisfaction has been an ongoing process since the publishing of Hoppock's book, Job Satisfaction (1935). The objectives of these studies have generally been to determine whether there is a significant correlation between job satisfaction and such variables as job performance, turnover, and absenteeism. This research was dedicated to correlating the elements of job satisfaction to turnover in Air Force Audit Agency (AFAA) civilian auditors. In this chapter, background information will be developed in regard to the concept of turnover. The mission and organizational structure of the AFAA are detailed in Appendix A. Subsequent chapters evolve the literature review, research methodology, analysis, and conclusions and recommendations.

#### The Concept of Turnover

Turnover is a dynamic concept. It is concerned with the movement, circulation, or flow of individuals across the membership boundaries of social systems. The focus of the research in this paper will be upon turnover concerning one type social system, namely -

organizations. A concise definition of turnover will make possible the delineation and measurement of its parameters.

Definition:

Voluntary turnover is individual movement across the membership boundary of a social system which is initiated by the individual [19:9].

Terms associated with voluntary turnover are "quits" and "resignations" and the two words are often used interchangeably. The terms "dismissal", "layoff", "retirement", and "death" exemplify movement not initiated by the individual, or involuntary turnover (19:9). Within this paper, unless otherwise indicated, turnover will refer to individuals who voluntarily leave organizations. Specifically, the concentration will be upon civilian auditors who voluntarily separate from the AFSA.

Measurement

In his codification of research on turnover, Price identified three turnover measures which have had widespread usage (19:12-18).

1. Average length of service:
  - a. Stayers
  - b. Leavers

2. Crude turnover rates:

a. Accession

b. Separation

3. Stability and instability rates.

The crude turnover rates were computed for the AFAA for fiscal years (FY) 78, 79 and 80. This measure was chosen because of its widespread usage, ease of computation, and understandability. The definition of turnover developed provides for movement both in and out of the organization. The crude turnover rates indicate all movement in and out of the organization. The rates for average length of service and the stability and instability rates were not computed at the onset of the study because corresponding measures were to be developed during the data analysis phase. Disadvantages to the crude turnover rates include their lack of precise meaning and their propensity to be misleading, especially during periods when the size of the organization was increasing. This situation prevailed in the AFAA, where the number of civilian auditors increased from 371 (October 1977) to 549 (September 1980). Computation of the crude turnover rate was accomplished by utilizing the following formulae:

$$\text{Accession Rate} = \frac{\text{Number of new members added during the period}}{\text{Average number of members during the period}}$$

Separation Rate =  $\frac{\text{Number of members who left during the period}}{\text{Average number of members during the period}}$

TABLE 1

CIVILIAN AUDITOR ACCESSIONS/SEPARATIONS  
FOR THE PERIOD  
OCTOBER 1977 THRU SEPTEMBER 1980

	<u>FY 1978</u>		<u>FY 1979</u>		<u>FY 1980</u>	
	<u>NUMBER OF</u>		<u>NUMBER OF</u>		<u>NUMBER OF</u>	
	<u>ACCESSIONS/</u>	<u>SEPARATIONS</u>	<u>ACCESSIONS/</u>	<u>SEPARATIONS</u>	<u>ACCESSIONS/</u>	<u>SEPARATIONS</u>
October	15	1	8	3	7	3
November	7	2	6	4	12	2
December	6	3	4	3	13	5
January	13	3	7	6	14	8
February	9	2	2	4	11	11
March	9	4	2	3	7	10
April	14	2	8	10	9	6
May	11	5	13	3	8	9
June	13	2	14	8	11	8
July	21	4	10	2	5	6
August	9	7	11	1	8	9
September	<u>11</u>	<u>2</u>	<u>17</u>	<u>8</u>	<u>16</u>	<u>10</u>
ANNUAL TOTAL	138	37	102	55	121	87

MEMBERS:

START OF PERIOD	371	466	513
END OF PERIOD	466	513	549
AVERAGE	<u>418.5</u>	<u>489.5</u>	<u>531</u>
ACCESSION RATE	$\frac{138}{418.5} = 32.9\%$	$\frac{102}{489.5} = 20.8\%$	$\frac{121}{531} = 22.8\%$
SEPARATION RATE	$\frac{37}{418.5} = 8.8\%$	$\frac{55}{489.5} = 11.2\%$	$\frac{87}{531} = 16.4\%$

The determination as to whether the crude turnover rates were "high" would have been difficult without comparative data. Information from the US General Accounting Office (GAO), Annual Report 1979, in regard to turnover, provided the following comparisons for FY 79.

Accession Rate

AFAA . . . . .	20.8% (Table 1)
GAO . . . . .	4.0% (165/4116.5 X 100)

Separation Rate

AFAA . . . . .	11.2% (Table 1)
GAO . . . . .	5.6% (232/4116.5 X 100)

As noted earlier, the AFAA civilian auditor staff was increasing during the period as indicated by the accession rates computed in Table 1. The separation rates did not provide any precise information in regard to length of service of members who separated from the AFAA. It was, however, more than just interesting to observe that the separation rate for the AFAA was twice the GAO separation rate during FY 79.

### Impact

The impact of personnel turnover can be measured on a monetary cost basis as well as by other empirical measures. Associated monetary costs would be for such actions as recruitment, selection, placement, training, and separation. It is evident that if each action causes an expenditure of resources, then an increase in actions would result in increasing costs to the organization. In his codification of turnover, Price (19:92-111) categorized six propositions in regard to the effects of turnover. These propositions are ranked by having either medium or low amounts of empirical research in their support. There were no propositions having what Price considered a high level of supporting research (19:93). The propositions with medium support are: when turnover is increasing the organization might experience a decrease in satisfaction; an increase in innovation; and a decrease in centralization. Whether the reactions contained in the propositions are occurring in the AFAA, or whether they are beneficial or detrimental to the agency, are questions that were beyond the scope of this research.



## CHAPTER II

### Literature Review

#### Introduction

Many research studies have been done on the subject of organizational turnover. These range from major intellectual achievements to brief citations of pertinent literature and cover categories of workers from blue collar laborers to professionals. The major portion of this research focused on voluntary withdrawal from organizations. As expected, conflicting conclusions have often resulted from these studies. Price (19:24) proposed some reasons for the apparent inconsistencies:

(1) Few of the existing studies include all of the correlates of turnover;

(2) Correlates and determinants of turnover are usually not distinguished in the existing studies. According to Price, correlates and determinants of turnover are different. Empirical generalizations which embody the correlates "describe", whereas the propositions which embody the determinants "explain". This distinction between description and explanation has not been maintained in many studies (19:24);

(3) Controls over the variables under study were generally weak, which allowed the possible contaminating influence of other variables.

Inconsistency in results does not mean that previous research is invalid or useless. For many of the frequently used correlates and determinants of turnover, there is ample evidence of a consistent relationship. Price explains this by stating:

The existence of deviant cases is expected and is indicated by the word "usually" in the empirical generalizations. A set of different determinants is responsible for producing variations in turnover, and these variations will be reflected in the indicators of turnover - the correlates. . . The lack of deviant cases usually signifies a lack of research or inadequate coverage of the literature [19:27].

This literature review was developed along the lines of several conceptual turnover models. In order to gain an understanding of the relationships among correlates, determinants, intervening variables, and turnover, four such models will be briefly discussed. These models are similar and, in most cases, build on or develop around each other. This relationship will be important to the ultimate model which was developed for this study. Following discussion of the models is a review of the correlates, determinants, and intervening variables which were used in the development of our research model.

#### Concepts of Turnover

Two important conceptual frameworks for the study of turnover are: The Study of Turnover, by James L. Price, and Organizational, Work, and Personal Factors in

Employee Turnover and Absenteeism, by Lyman W. Porter and Richard M. Steers. Both frameworks attempt to describe relationships between descriptors (correlates), causal factors (determinants), intervening variables, and voluntary turnover.

#### Porter and Steers

Porter and Steers noted that, on a general level, overall job satisfaction was found to be consistently and inversely related to turnover (17:151). In order to make the concept of job satisfaction more meaningful, it was broken down into various factors which could be analyzed for relationships to withdrawal behavior. These factors were categorized into four groups, each representing a different organizational level. The groups were: organization-wide factors such as pay and promotion; immediate work environment factors including supervisory style and peer group interaction; job-related factors such as task repetitiveness and role clarity; and personal factors such as age, tenure and similarity of job with vocational interest. Many of the factors investigated by Porter and Steers correspond to the correlates and determinants of turnover which will be discussed later in this chapter.

In addition to job satisfaction factors, the Porter and Steers study discussed the role of "met expectations"

in turnover studies. They concluded that the concept of "met expectations" had a major impact on an individual's decision to withdraw from an organization.

The concept of "met expectations" may be viewed as the discrepancy between what a person encounters on the job in the way of positive and negative experiences and what he expected to encounter [17:152].

"Met expectations" is an intervening variable which will also be discussed later.

The Porter and Steers framework was developed into a conceptual model by Blackburn and Johnson (2:19). Figure 1 depicts the relationships between the correlate and determinant factors, the "met expectations" and satisfaction intervening variables, and turnover.

#### Price.

Price's study of turnover was a codification of literature on the subject of turnover in organizations. He conceptualized a relationship among correlates, determinants, intervening variables, and turnover. He also provided varying amounts of supporting evidence as to the strength of these relationships. For example, correlates were presented with three classes of evidence; strong, medium and weak. In addition to codifying literature, Price developed a model (Figure 2) of turnover using the factors most strongly supported by his review. This model is similar to the Blackburn and Johnson model

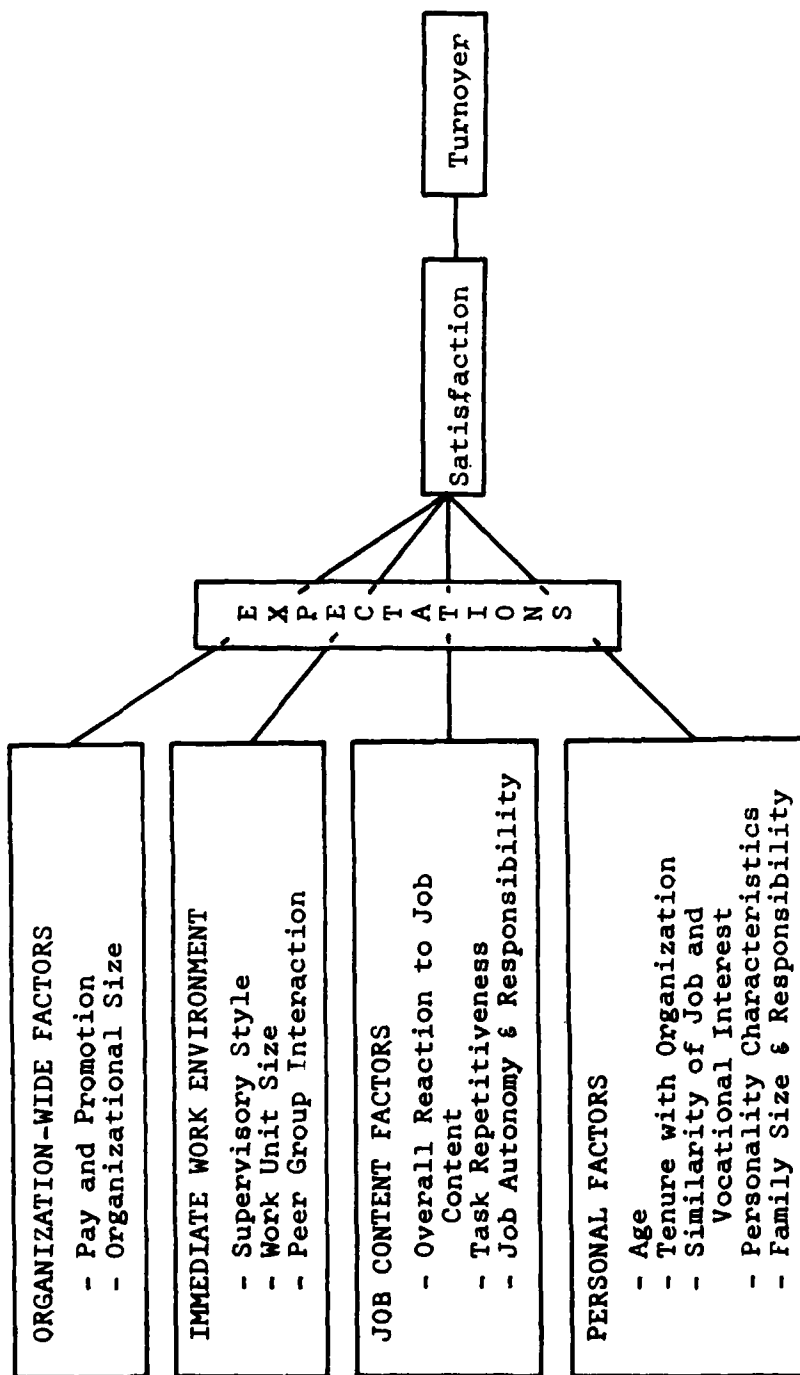


Figure 1  
Blackburn and Johnson's

Model of Porter and Steers' Conceptual Framework (2:19)

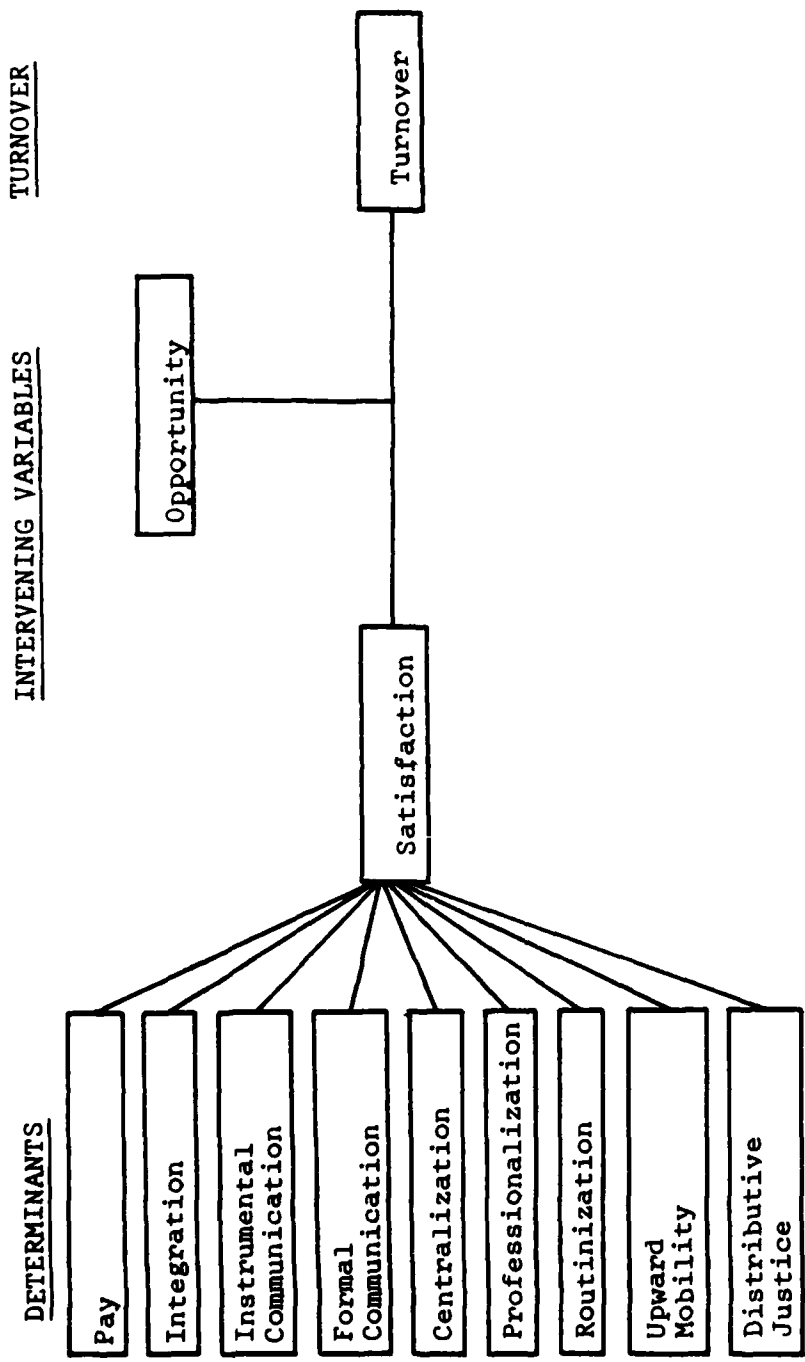


Figure 2  
Price Turnover Model (19:84)

(developed around the Porter and Steers framework) with the addition of the intervening variable opportunity.

Blackburn and Johnson/Gulick and Laakman.

In their masters thesis, Blackburn and Johnson synthesized the conceptual model of Price with their own model developed around the Porter and Steers framework. This synthesis consisted of combining the intervening variable, opportunity, proposed by Price with the determinants of job satisfaction proposed by Porter and Steers. This model was used to study the impact of external factors brought about by increased job opportunity on the decisions of individuals to withdraw from an organization. Gulick and Laakman (5:20), also in a masters thesis, modified the Blackburn and Johnson model to include additional determinants of job satisfaction and to eliminate some of the determinants used in the Blackburn and Johnson study (2:17). These models are illustrated in Figures 3 and 4. These syntheses of the Price model and the Porter and Steers framework were an attempt to operationalize models for the study of different organizations. This concept was important to the development of the model that was ultimately used for this study.

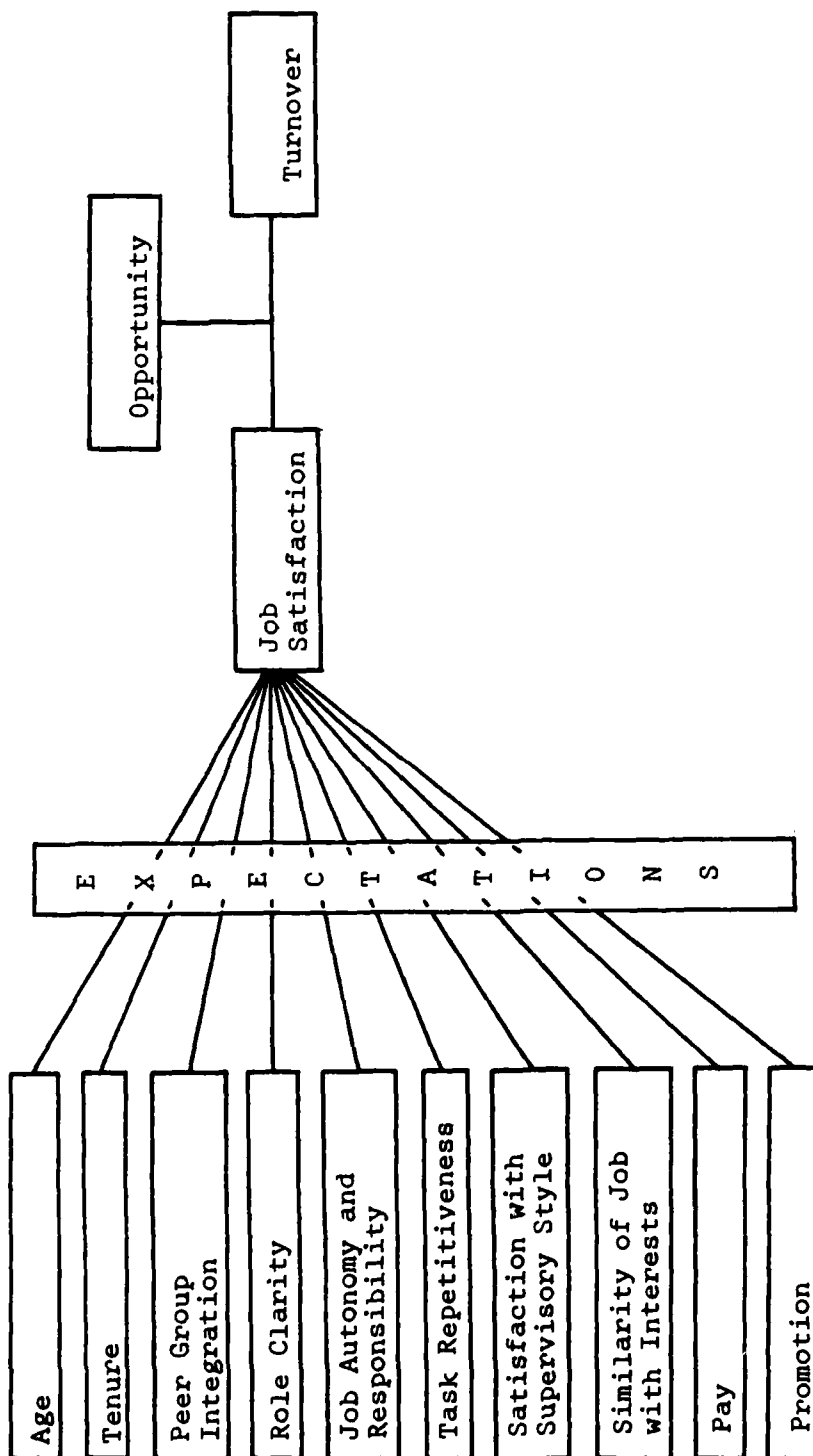


Figure 3

Blackburn and Johnson's

Synthesized Model (2:40)



TURNOVER

INTERVENING VARIABLES

DETERMINANTS

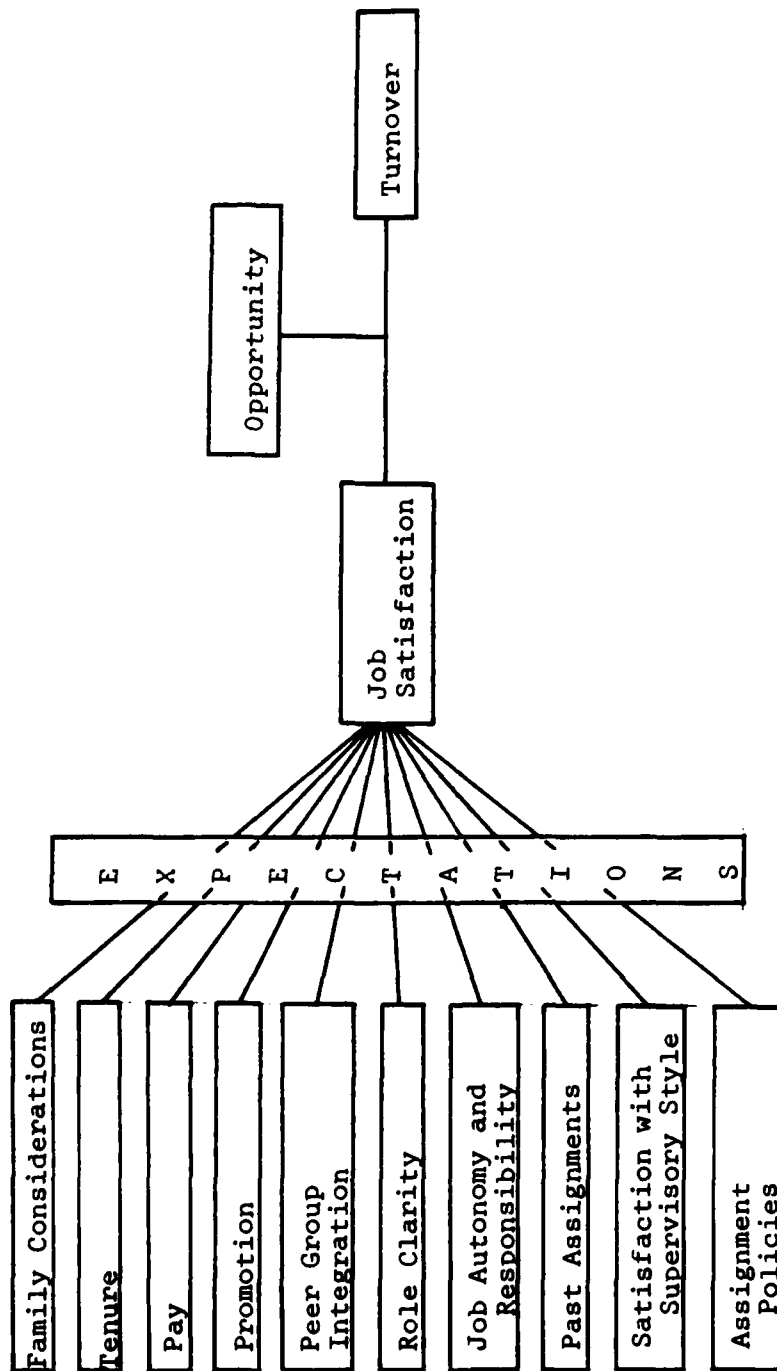


Figure 4

Gulick and Laakman's

Operationalized Model (6:17)

## The Factors of Turnover

### Correlates

Correlates are empirical generalizations which indicate correlation between variables rather than causation. In the study of turnover, they are the indicators to which turnover is related and are commonly called demographic variables (19:24). Correlates important to this study will be discussed in detail.

Age. There is strong evidence to indicate that younger employees usually have higher rates of turnover than older employees. That is, a negative relationship exists between increased age and turnover. Weaver noted that a positive age job satisfaction association had been reported in numerous national surveys and organizational studies (23:365). In a study by Porter, Steers, Mowday, and Boulian on job satisfaction and turnover among psychiatric technicians, the mean age for stayers (31.9 years) was significantly higher than the mean age for quitters (23.9 years) (18:605). Deviations have been noted, however, including a study indicating a reverse relationship for employees during training periods which reverted to the expected relationship after six months on the job (17:164). Overall, however, there appears to be little argument that age is negatively related to turnover.

Tenure. Like age, it has been found that tenure has a strong negative relationship to turnover. That is "members with low lengths of service usually have higher rates of turnover than members with high lengths of service [15:26]." While members of both groups do leave the organization, of those who leave during a given period there is likely to be a greater number of individuals with low lengths of service (19:26). One study summarized by Porter and Steers indicated that tenure on an employee's previous job was a highly accurate predictor of the likelihood of remaining on the present job (17:165).

Education. Price indicates that there is, at best, a weak correlation between the level of education and turnover. However, a number of studies offer evidence that better educated members usually have higher rates of turnover than less educated members (19:35). Weaver notes the apparent development of a pattern in this correlation. National surveys conducted between 1958 and 1964 showed either a lack of relationship or a negative relationship between level of education and turnover. However, since 1969, the positive relationship pattern began to develop and has continued through 1978, the last year for which data were available (23:36). Significant differences in

turnover rates were between individuals with a college degree or higher and high school graduates.

Sex. Although sex is often included as a correlate of turnover, the evidence as to the relationship between the two is questionable. The most consistent finding is that female members have higher rates of turnover than male members. However, other studies indicate just the opposite is true. Finally, there is the well-documented position that there is no difference between male and female turnover rates or that the evidence is so unclear that no conclusion can be drawn (19:40).

Ethnic origin. Most of the studies dealing with ethnic origin are in terms of levels of job satisfaction among various races. Assuming that the level of job satisfaction directly relates to an individual's propensity to remain with an organization, considerable evidence is available which indicates that ethnic origin is a correlate of turnover. Generally these studies show that Mexican Americans are usually less likely to leave an organization than whites, who are usually less likely to leave an organization than blacks. Weaver found that:

black-white comparisons for each year from 1972 to 1978 extend evidence from a number of earlier national surveys that job satisfaction among blacks is considerably lower than among whites [23:365].

Although blacks were found to be consistently less-satisfied than whites, there were no significant patterns of improvement or worsening of job satisfaction for either race (23:365).

In a study of Certified Public Accountants, Moch found black CPA's less satisfied than their white counterparts (13:299). This difference may be attributable to both cultural and structural factors. Cultural differences relate to beliefs, values, or psychological states that "predispose members of different races to respond differently to their experiences in the organization [13:299]."

Structural differences have to do with how different races are treated by the organization or their superiors. This could be manifested through lack of promotional opportunity and upward mobility or bias in performance evaluation. In another study which included blacks, whites, and Mexican-Americans, Moch found that blacks reported less satisfaction than whites, while Mexican-Americans reported more satisfaction than whites (13:303). All in all, there appears to be enough evidence for including ethnic origin as a correlate in the study of turnover.

### Determinants

As contrasted to correlates, determinants of turnover are explanatory rather than descriptive statements. They are analytical variables which are believed to produce variations in turnover. That is, there is a causal relationship between determinants and turnover.

Adversary role. Little empirical work has been done to study the effect of the adversary role on turnover. However, the internal auditor is often perceived as an "adversary" of management. Hart, in his study of internal auditors, stated, "there is fear about what the auditors will tell their (manager's) superiors and what the reaction will be [7:54]." Even though the goal is cooperation between auditor and management for the good of the organization, the element of fear makes for natural adversaries. In terms of a determinant, it could be said that successively higher levels of adversary relationships will probably produce successively higher levels of turnover. Clancy, Collins and Rael noted that internal auditors believe that other company personnel do not understand the objectives of the audit group. In addition, auditors and auditees differed in their perceptions of the amount of cooperation between the two groups during an audit (4:46). Further,

auditees expressed anxiety associated with audit reports, belief that internal audit was only marginally effective and accurate, and preference to audits by independent auditors rather than internal auditors. Finally, Hyde put the auditor's role into perspective:

The internal auditor is generally regarded by operating personnel as a policeman. Because his reports to higher levels of management contain criticisms of operating performance, in that they identify performance failures and errors, he is seen as a threatening force to be suspected and feared. As a result, he seldom enjoys willing cooperation and assistance, and his suggestions for changes in operating systems are often resisted [11:69].

For these reasons, the adversary role was tested as a determinant of turnover in this study.

Pay. Pay is believed to have a negative causal relationship to turnover. "Successively higher amounts of pay will probably produce successively lower amounts of turnover [15:68]." Pay is defined as money, fringe benefits, and any other financial remuneration that organizations give to employees in return for their services (15:68). In a study of CPA firms by Carrell and Faircloth, it was noted that the firm with the lowest pay had the highest turnover rate (3:38). Many other studies codified by Price also support this relationship. There appears to be two primary factors affecting pay as a determinant. First is the perceived equity of rewards

compared to expended effort. Although this begins to deal with the intervening variable "expectations", it is, nonetheless, a realistic approach to viewing pay as a determinant. Second, also related to expectations, is the idea that continued participation in the organization will result in more positive valent outcomes rather than alternative behavior (17:155).

Promotion. Promotion as a determinant means, more accurately, promotional opportunities. Successively greater promotional opportunities will probably result in successively lower amounts of turnover. Carrell and Faircloth noted, also in their study of CPA firms, that firms which employees gave low ratings in employee evaluation had the highest rates of turnover. In this case, employee evaluations were used to determine promotional opportunities for staff and middle level supervisor positions (3:38). Porter and Steers also noted several studies in which the lack of promotional opportunities represented a primary stated cause for withdrawal from the organization (17:155).

Peer group integration. Peer group integration can provide support and reinforcement necessary for adjustment and attachment to the work environment (17:159). Thus, the determinant of integration can be stated as



"successively higher amounts of integration will probably result in successively lower amounts of turnover [15:79]." Two factors appear to lead to this conclusion: group cohesiveness and inclusion in the organization. Price states:

Turnover is high where conditions are such as to inhibit the development of small group cohesiveness. A major need satisfier is likely to be that of belonging to a cohesive and rewarding group, and if this need is not satisfied, the worker will very likely fail to adjust to the work situation and will therefore more readily withdraw from it [15:79].

Role clarity. Successively higher degrees of role clarity will probably result in successively lower amounts of turnover. The opposite of role clarity is role ambiguity. Because many studies of turnover identify role ambiguity as a factor of job dissatisfaction, it may be easier to view role clarity from this viewpoint. Role ambiguity may result from rapid organizational changes, organizational complexity, and managerial philosophies concerning communications. If allowed to persist, such ambiguities may result in feelings of futility and general job dissatisfaction which can often lead to withdrawal. Role clarity can be viewed in two ways. First, it is important to clearly define the job to the job applicant prior to employment. This helps to select out those who do not view the rewards as justifying the job. Second, for those already employed, accurate role perceptions help

adjust expectations to realistic levels to increase satisfaction and reduce the willingness to withdraw. This determinant may prove critical to the success of this study. According to Hyde, the term "Internal Auditing" has become ambiguous. The role of the internal auditor has changed dramatically in recent years. For auditors to clearly understand their roles, he suggests the use of different, clearer categories of role definitions for auditors be used in the hope of clarifying ambiguities in the current practice of internal auditing (11:65). There is strong support for role clarity as a determinant of turnover as indicated in the Porter and Steers codification. They noted that:

Prior knowledge and understanding of the role requirements were a significant factor in continued participation. Job applicants who were provided with a clear picture of their jobs prior to employment would be more likely to remain with the organization than those who did not receive such information [17:163].

Job autonomy and responsibility. The degree of autonomy and responsibility experienced on the job has been found to affect the propensity to withdraw. Successively greater amounts of autonomy and responsibility will probably result in successively lower amounts of turnover. While the evidence for this relationship is not as strong as some determinants, sufficient studies have reported the importance of autonomy and responsibility for

inclusion in this study. Porter and Steers codified several studies supporting this relationship and concluded that employees who reported lower levels of autonomy were more likely to withdraw (17:163).

Task repetitiveness. A study done by Taylor and Weiss (codified by Porter and Steers) found that variety of work was significantly related to turnover (17:162). Thus, successively higher levels of task repetitiveness should lead to successively higher levels of turnover. Conversely, greater job variety should lead to employee satisfaction and a propensity to remain with the organization. Like job autonomy, the literature does not support a strong relationship between task repetitiveness and turnover. In fact, some studies found no clear relationship (17:162). The nature of an auditor's job is perceived to be non-repetitive. Thus, this determinant may assist in reinforcing the idea that auditors should be well satisfied with respect to task repetitiveness.

Supervisory style. Supervisory style is believed to affect turnover such that successively lower levels of supervisory consideration will probably lead to successively higher levels of turnover. Several studies have found that turnover was high for groups whose supervisors rated low in consideration, high as

authoritarians, and had less than five years experience (17:157,158). Another study found lack of consideration to be the second most cited reason for withdrawal (17:158).

Similarity of job content with vocational interest. This appears to be a relatively new determinant of turnover. Three recent studies found employees who remained with an organization longer tended to display higher levels of vocational interest (17:166). As a determinant, it could be stated that successively higher levels of vocational interest would probably lead to successively lower levels of turnover.

Organizational commitment. In their study on organizational commitment, Porter, Steers, Mowday, and Boulian found a strong relationship to turnover. They stated "commitment to the organization was clearly the most important variable differentiating between stayers and leavers [18:606]." Although there did not appear to be a great deal of supporting evidence for this position, organizational commitment was included in this study. Commitment to an organization has been defined in terms of the strength of an individual's identification with and involvement in a particular organization (18:604). Successively higher levels of organizational commitment should lead to successively lower levels of turnover.

Overall reaction to job content. This determinant appears to be closely related to role clarity. However, it is assumed that the employee understands his job and reacts to it in a positive or negative fashion. Time on the job may also be an important factor in this determinant. In studies done on reaction to job content it was observed that the first job assignment was likely to produce greater amounts of disappointment and dissatisfaction than subsequent job assignments (17:162). For the purpose of expressing the relationship of overall reaction to job content to turnover, it could be said that successively higher levels of favorable reaction to job content should lead to successively lower levels of turnover.

#### Intervening Variables

The variables discussed in this section appear to intervene between the previously described determinants and turnover. Price differentiates intervening variables as social psychological variables (satisfaction, met expectations, and growth need) and structural variables (opportunity). He also concludes that intervening variables do not occur simultaneously. For example, satisfaction precedes opportunity (19:79).

Satisfaction. Satisfaction is defined as the degree to which members of a social system have a positive affective orientation toward membership in the system (15:79). Porter and Steers noted that overall job satisfaction occupies the central role in the decision to withdraw from an organization (17:151). There is a consistent negative relationship between job satisfaction and the propensity to leave; as satisfaction increases, turnover decreases. Satisfaction, as an intervening variable, is a product of the various determinants of turnover. According to Price:

To argue that variations in satisfaction produce variations in turnover is inadequate. What is required is specification of organizational characteristics which are responsible for the variations in satisfaction [19:80].

Met expectations. This variable refers to the level of expectation an individual perceives as the result of a given level of performance versus what he actually receives. It can also refer to the amount of rewards an individual believes should be attached to a particular position or job (16:29). An individual would perceive various levels of met expectations with regard to the determinants of satisfaction. If expectations were reasonably well met, job satisfaction should result. Thus met expectations intervene between the determinants and satisfaction. Porter and Steers present several important

conclusions resulting from studies of met expectations:

(1) The decision to participate or withdraw from an organization may be looked upon as a process of balancing received or potential rewards with expectations; (2) whatever the determinants of the individual's expectation set, it is important that those factors be substantially met if the employee is to remain with the organization; (3) clarification of both expectations and potential rewards should have the effect of generally increasing the degree to which such expectations are met; (4) clarifying expectations among entering personnel so as to bring them into closer alignment with available rewards is a key to the reduction of turnover (17:171,172).

Opportunity. Opportunity is defined as "the availability of alternative roles in the environment [19:81]." In the study of turnover, alternative roles are normally jobs available outside the organization. Opportunity intervenes between the determinants and turnover. However, unlike satisfaction, opportunity is not a product of the determinants but a characteristic of the environment in which the organization exists. Price found that opportunity could explain most of the contradictory data regarding the suggested causal relationship between satisfaction and turnover. Members who have a net balance of satisfaction over dissatisfaction generally do not seek

to leave organizations. When opportunity is relatively high, it is the dissatisfied members who generally seek to leave the organization. When opportunity is low (as during periods of high unemployment or reductions in force), dissatisfied members are not as willing to leave because of the difficulty in finding other jobs. These members provide most of the contradictory data (19:82,83). Two important assumptions about opportunity are made in the Price codification. First, the individual has knowledge of the opportunities available. Second, the individual has the freedom to leave the organization. Both of these conditions must exist for opportunity to be considered as an intervening variable.

#### A Conceptual Model

The literature review in the preceding sections of this chapter identified the predominant correlates, determinants, and intervening variables which impact on turnover. Some additional determinants, believed to be of importance to this study, were also introduced. All of these determinants have been shown to be associated with job satisfaction, a central variable in the process of organizational turnover.

To provide a framework for this study, a conceptual model has been developed (Figure 5). This model was used to develop the methodology for identifying the major



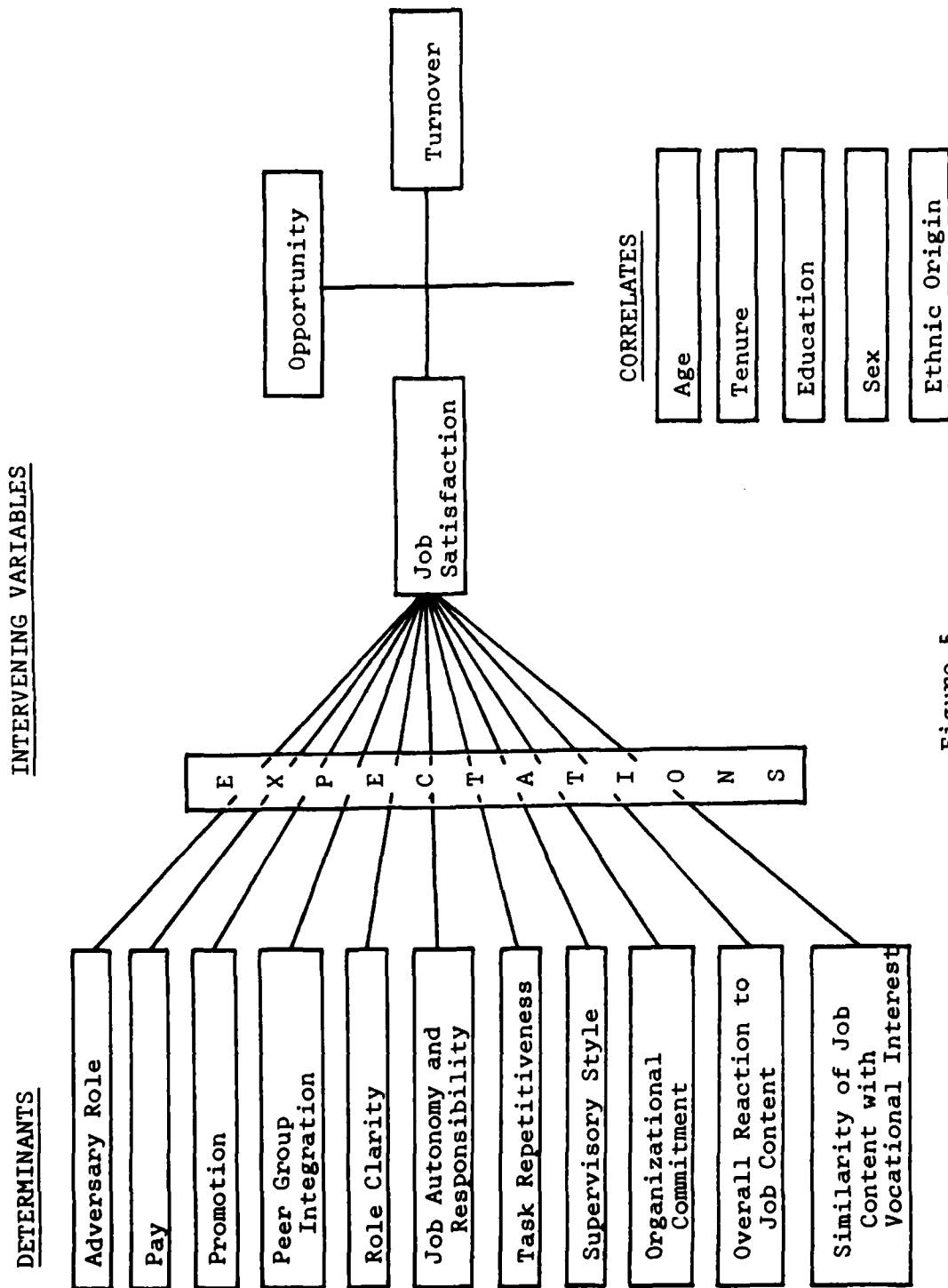


Figure 5  
Conceptual Model

factors contributing to the turnover of civilian auditors within the Air Force Audit Agency.

#### Problem Statement

The executive managers of the Air Force Audit Agency have identified the turnover of the civilian audit staff as a primary area of managerial concern within the agency. The need exists, therefore, to identify and analyze the causal factors of the high turnover of civilian audit staff personnel. To the degree that agency managers could control the causal factors of turnover, they could influence the rate of turnover.

#### Research Objectives

The research objectives of this study were to:

- 1) Identify the significant factors contributing to the turnover of civilian auditors within the Air Force Audit Agency.
- 2) Develop a symbolic model that quantifies the relationships and/or interactions between employees attitudes about their job (satisfaction) and the identified factors of turnover.
- 3) Determine the extent of management's control over the identified significant factors of turnover.

### Research Questions

To fulfill the objectives of this research, the following questions were posed.

1) This research question involved a series of hypotheses which, in turn, provided the identification of the significant factors of turnover (Objective 1). The analysis of significance utilized the symbolic model developed in satisfying the second research objective. The following hypotheses were concerned with the relationships of the determinants of job satisfaction to the career intent of civilian auditors within the Air Force Audit Agency.

Hypothesis 1 - An increase in the individual's perceived level of adversary role will result in a decrease in career intent.

Hypothesis 2 - An increase in the level of pay results in increased career intent.

Hypothesis 3 - An increase in grade (general schedule) results in an increase in career intent.

Hypothesis 4 - An increase in peer group integration results in increased career intent.

Hypothesis 5 - An increase in role clarity results in increased career intent.

Hypothesis 6 - An increase in job autonomy and responsibility results in increased career intent.

Hypothesis 7 - An increase in task repetitiveness will result in a decrease in career intent.

Hypothesis 8 - An increase in the individual's perception of the effectiveness of supervisory style will result in an increase in career intent.

Hypothesis 9 - An increase in organizational commitment will result in increased career intent.

Hypothesis 10 - An increase in the individual's perception of desirable elements of job content will result in increased career intent.

Hypothesis 11 - An increase of similarity of job content with vocational interest will result in increased career intent.

The following hypotheses were concerned with the relationship of the correlates to career intent.

Hypothesis 12 - Age is not a significant factor of career intent.

Hypothesis 13 - Tenure is not a significant factor of career intent.

Hypothesis 14 - Education is not a significant factor of career intent.

Hypothesis 15 - Sex (gender) is not a significant factor of career intent.

Hypothesis 16 - Ethnic origin is not a significant factor of career intent.

The following hypothesis is concerned with the relationship of the intervening variable and expressed career intent (the inverse of turnover, utilized herein as a surrogate for turnover).

Hypothesis 17 - As perceived opportunity increases, the expressed intention to make the Air Force Audit Agency a career will be more positive.

2) Are levels of need satisfaction found in the current members significantly related to the level of need satisfaction found in middle-level managers, middle-level accountants and internal auditors in private business (Objective 3)?

## CHAPTER III

### RESEARCH DESIGN AND METHODOLOGY

#### Introduction

This chapter provides the research design and methodology utilized in the conduct of this study. The data gathering plan is presented first, followed by the variable definitions and measurement plans, and the data analysis plan. Finally, the assumptions underlying the research plan are presented.

#### Data Gathering Plan

##### Data Collection Instrument

The data collection device (Appendix B) was designed as a measurement instrument of the attitudes of the current audit staff of the Air Force Audit Agency (AFAA). The questionnaire was a construct developed from the model presented in Chapter II (Figure 5). The following sources provided questionnaire elements: Organizational Survey Assessment Package for Air Force Organizations (9:19-25), The Review and Implications of Job Satisfaction and Work Motivation Theories for Air Force Research (22:34), and the studies of turnover and need satisfaction by Price (19:24-43,66-91) and Porter (16:41-55). The survey questionnaire was administered to all civilian auditors

employed by the Air Force Audit Agency as of the date of the survey. A total of 585 questionnaires were furnished to the region/directorate offices based upon their personnel authorization levels for civilian auditors.

Survey Bias. Passive measures were undertaken to avoid survey bias. All possible respondents were afforded the opportunity of completing the questionnaire, and the surveys were conducted on a census basis.

Instrument Validity and Reliability. Testing for validity and reliability of the survey instrument was performed during the research analysis. The results of this testing are reported in Chapter IV.

#### Description of the Population

The target population of this study consisted of all civilian auditors employed by the Air Force Audit Agency.

#### Variable Definition and Measurement

##### Expressed Career Intent

Expressed career intent is the dependent variable of the synthesized model presented in Chapter II, Figure 5. It was used as a surrogate for turnover and was operationally defined in this study as the stated intent of an individual



to remain as an employee of the Air Force Audit Agency. Expressed career intent for each respondent was measured by their responses to survey questions:

17. To what extent do you intend to remain with the Air Force Audit Agency?

18. I would rather be performing some other type of work.

### Intervening Variables

Satisfaction. Job satisfaction was defined as the degree to which a member of an organization has a positive effective orientation toward membership in the organization. Direct measures of job satisfaction levels have been made using the Hoppock Measure which is a set of four questions relating to an individual's feelings of job satisfaction. However, the purpose of this study was not to determine the level of satisfaction but to determine the cause of job satisfaction or dissatisfaction and relate this to career intent and turnover. Therefore, satisfaction was treated as an intervening variable between determinants of job satisfaction and turnover. The survey instrument posed questions directed toward measuring selected determinants and correlates.

Opportunity. Opportunity, another intervening variable, represents external factors that contribute to an individual's decision to leave an organization. In this

study, opportunity specifically represents alternative job opportunities in the environment and was defined as an individual's perception of the availability of jobs in both public service and private industry with pay, benefits, responsibilities, and skill requirements comparable to the present job. Opportunity was measured by the responses to the following statements:

22. The extent of the demand for your skills in the job market.

23. The amount of pay I receive is more than I would expect to receive outside the Air Force Audit Agency.

#### Determinant Variables

Adversary Role. The adversary role as a determinant of job satisfaction was developed specifically for this study. It was included because of the nature of the internal auditor's relationship with management and the effect this relationship may have on job satisfaction. For this study, adversary role was operationally defined as an expected, perceived, and enacted role in which the auditor finds himself in conflict with or essentially excluded from management. Adversary role was measured by responses to the following survey questions.

31. To what extent is your job

significant, in that it affects  
others in some important way?

The prestige of my position outside  
the Air Force Audit Agency (that is,  
the regard received from others not  
in the agency):

67. How much is there now?

68. How much should there be?

The opportunity, in my position,  
to give assistance to other people:

71. How much is there now?

72. How much should there be?

The feeling that there is an adversary  
position between the auditor and Air  
Force management:

77. How much is there now?

78. How much should there be?

Pay. Pay, as a determinant of turnover, has consistent and  
strong support in the literature. It was operationally  
defined as money, fringe benefits, and any other financial  
remuneration that the organization gives to employees in  
return for their services (19:68). Pay was measured by the  
responses to questions:

9. What is your General Schedule  
(GS) grade?

10. What is your General Schedule  
Step?

38. The amount of pay I receive is more  
than I would expect to receive outside  
the Air Force Audit Agency.

The feeling of security in my position:

63. How much is there now?

64. How much should there be?

Promotion. Promotion is another determinant variable strongly supported in the literature on turnover. For this study, promotion was operationally defined as an individual's perception of the effectiveness of the Air Force Audit Agency's civilian promotion system in selecting the best qualified people for promotion. Measures of promotion were arrived at from responses to questions:

9. What is your General Schedule (GS) Grade?

10. What is your General Schedule Step?

12. To what extent are you aware of promotion/advancement opportunities that affect you?

24. Your chance for promotion compared to your peer-group in the Air Force Audit Agency.

25. The chance to be promoted on the basis of ability.

Peer Group Integration. Peer group integration is another strongly supported determinant of job satisfaction. It is primarily determined by the extent of an individual's participation in a cohesive, rewarding, primary group (2:55). It was defined as the degree to which members of an

individual's work group encourage participation, work as a team, exchange information, and cooperate with each other. Peer group integration was measured by the responses to questions:

26. The extent to which your effort is greater than the effort of your coworkers.

32. There is a high spirit of teamwork that exists between coworkers in my work group.

39. The quantity of output of your work group is very high.

40. The quality of output of your work group is very high.

41. Your organization has a very strong interest in the welfare of its people.

42. I am very proud to work for this organization.

The feeling of self-esteem a person gets from being in my position:

53. How much is there now?

54. How much should there be?

The prestige of my position within the Air Force Audit Agency (that is, the regard received from others in the agency):

59. How much is there now?

60. How much should there be?

The opportunity to develop close friendships in my position:

75. How much is there now?

76. How much should there be?

Role Clarity. Role clarity represents an individual's perception of various aspects of the clarity of his job within the organization. For the purpose of this study, role clarity was operationally defined as an individual's perception of the amount and accuracy of information about the job received prior to employment as well as the amount and frequency of clarifying information received relative to effective job accomplishment and performance while employed by the organization. Role clarity was measured by the responses to the following questions:

13. To what extent are your job performance goals clear and specific?

18. To what extent are the goals and values of the Air Force Audit Agency compatible with your own goals and values?

23. Prior to employment with the Air Force Audit Agency, the extent to which you understood what would be required of you in the performance of your job.

The opportunity, in my position, for participating in the setting of goals:

73. How much is there now?

74. How much should there be?

Job Autonomy and Responsibility. Job autonomy and responsibility deal with an individual's perception of the amount of freedom and responsibility allowed on the job. For this

study, job autonomy and responsibility were operationally defined as the amount of freedom, independence, and ultimate responsibility for the end product that individuals have. Measures of job autonomy and responsibility were the result of responses to questions:

14. To what extent does your job provide a great deal of freedom and independence in scheduling your work and selecting your own procedures to accomplish it?

27. The extent to which you can vary your work schedule when required to conduct personal business.

33. The final product of my effort closely resembles the published report.

The authority connected with my position:

55. How much is there now?

56. How much should there be?

The opportunity for independent thought and action in my position:

61. How much is there now?

62. How much should there be?

Task Repetitiveness. Task repetitiveness is the determinant variable concerned with the repetitive nature of the job. The literature indicates that highly repetitive jobs generally result in low levels of job satisfaction. An auditor's job is inherently diverse with little

repetitiveness. However, the lack of task repetitiveness may result in anxiety and insecurity due to the lack of familiarity with various tasks. Thus, for this study, task repetitiveness was operationally defined as an individual's attitude toward infrequently performing the same job or task. Task repetitiveness was measured by the responses to the following questions:

15. To what extent do you desire to perform the same (functional area) audits repeatedly?

29. If you performed the same type audit (or an audit of a functional area) frequently, would you be more satisfied with your job?

Supervisory Style. Supervisory style as a determinant of job satisfaction is strongly supported in the literature. Supervisory style was operationally defined for this study as an individual's perception of the supervisor's ability to make decisions, motivate subordinates, and provide effective leadership for the work group. An employee's level of satisfaction with these elements of supervisory style was measured by responses to the following questions:

28. The ability of your supervisor to make decisions.

34. My supervisor sets high performance standards.

35. My supervisor is an effective manager.



- 36. My supervisor encourages ideas for improving procedures.
- 43. My supervisor represents the group at all times.
- 44. My supervisor establishes good work procedures.
- 45. My supervisor has made his responsibilities clear to the group.
- 46. My supervisor's directions must be followed exactly.
- 47. My supervisor performs well under pressure.
- 48. My supervisor usually makes decisions without group discussion.
- 49. My supervisor overemphasizes the need to accomplish more than other groups.
- 50. My supervisor overcontrols my work.
- 51. My supervisor always helps me improve my performance.
- 52. My supervisor frequently gives me feedback on how well I am doing my job.

Organizational Commitment. As a determinant of job satisfaction, organizational commitment was defined as the degree to which the goals and values of an organization are compatible with personal goals and values accepted by the individuals. Organizational commitment was measured by responses to questions:

- 16. To what extent are you willing to exert considerable effort on the part of the Air Force Audit Agency?

18. To what extent are the goals and values of the Air Force Audit Agency compatible with your own goals and values?

Job Content. Job content deals with both the physical and psychological aspects of the job. For this thesis, job content was defined as an individual's perception of satisfaction with the physical surroundings of the work place, the ability to fully utilize his skills in performing required tasks, and the feeling of importance attached to the job. Measures of job content were the result of responses to questions:

14. To what extent does your job provide a great deal of freedom and independence in scheduling your work and selecting your own procedures to accomplish it?

19. To what extent does your job require you to do many different things, using a variety of your talents and skills?

20. To what extent is the work space provided adequate?

30. To what extent does your job involve doing a whole task or unit of work?

31. To what extent is your job significant, in that it affects others in some important way?

The opportunity for personal growth and development in my position:

57. How much is there now?

58. How much should there be?

The feeling of self-fulfillment a person gets from being in my position (that is, the feeling of being able to use one's own unique capabilities, realizing one's potentialities):

65. How much is there now?

66. How much should there be?

The feeling of worthwhile accomplishment in my position:

69. How much is there now?

70. How much should there be?

The availability of tools and materials to support the audit effort:

79. How much is there now?

80. How much should there be?

Similarity of Job Content with Vocational Interests. The literature supports the idea that individuals with jobs that closely parallel their vocational interests have higher levels of job satisfaction. For this study, similarity of job content with vocational interests was defined as an individual's perception of the degree to which the job relates to interests. Similarity of job content with vocational interests was measured by responses to questions:

21. To what extent does your job satisfy your vocational desires?

37. I would rather be performing some other type of work.

### Correlates

Correlates are indicators to which turnover has been shown to be consistently related. Unlike the determinants of job satisfaction, however, there does not appear to be any evidence of a causal relationship between correlates and satisfaction. Rather, correlates with strong empirical support are considered good predictors of the likelihood that an individual will leave or remain with an organization. The correlates selected for use in this thesis have generally demonstrated such relationships. They were: age, tenure, education, sex, ethnic origin, and managerial versus non-managerial positions.

Correlate data were gathered from respondent answers to demographic questions 1 through 10. For these questions, the respondents were asked to select the category which applied to them. Question 11 provided the respondents' marital status and whether the respondents' spouse was employed.

### Need Satisfaction

Need satisfaction deals with the manner in which individuals perceive the psychological characteristics of their jobs. These psychological characteristics correspond to Maslow's hierarchy of needs which include: security,

social, esteem, autonomy, and self-actualization needs. The concept of need satisfaction was the basis of a study on internal auditors by Smith and Uecker (21:48-53). They concluded that psychological rewards internal auditors obtained from their work may be more important in the growth and development of the internal auditing profession than monetary or other rewards (21:48).

Need satisfaction measures were developed from responses to questions 53 through 76, which were originally developed by Porter and Lawler (16:190-192) and used by Smith and Uecker in their study.

#### Survey Instrument Responses

With the exception of questions 1 through 11, which requested demographic information, all responses to questions were arrayed on a Likert seven-point scale with values from 1 to 7. Numerical values were assigned meaning as follows:

Questions 12 through 31 - 1 (Not at all) to 7 (To a very great extent).

Questions 32 through 52 - 1 (Strongly disagree) to 7 (Strongly agree).

Questions 53 through 80 - 1 (None) to 7 (A very great amount).

## Data Analysis

### Factor Analysis

The technique of factor analysis was used to establish valid constructs (i.e., factors) measured by the questionnaire. Factor analysis was selected due to its data reduction capability and its ability to take many measurements and qualitative observations and resolve them into distinct patterns of occurrence. Factor analysis can easily manage a large number of variables, compensate for random error and invalidity, and simplify complex interrelationships into their major and distinct regularities (20:444).

Through the use of factor analysis, the questionnaire data gathered was rearranged into a set of factors. This was used for the following purposes:

1. To explain and detect the patterning of variables.
2. To test hypotheses concerning the structuring of variables in relation to the anticipated number of significant factors and factor loadings.
3. To construct indices which may be used as variables in follow-on analysis (14:469).

The term "factor-analysis" actually refers to a variety of mathematical procedures. For this research effort, classical-factor analysis was used. Classical-factor analysis is "based fundamentally on the

assumption that the observed correlations are mainly the results of some underlying regularity in the data [14:471]." Thus, we assume that the observed variables are influenced by various determinants, and that some of the determinants are shared by other variables included in the set while other determinants are not shared by any other variable. The portion of the variable effected by shared determinants is called common, while the part that is influenced by idiosyncratic determinants is called unique (14:471). The general assumption is that the unique part of a variable makes no meaningful contribution to relationships among variables. It follows, then, that observed correlations are the result of correlated variables sharing some of the common determinants. The result is the idea that those assumed common determinants will not only account for all observed relations in the data, but will also be smaller in number than the original variables. These premises lead us to the fundamental activities in factor analysis: 1) prepare the correlation matrix; 2) extract the initial factors and explore the possibility of data reduction; and, 3) search for simple and interpretable factors.

The basic classical-factor analysis model takes the form:

$$z_j = a_{j1}F_1 + a_{j2}F_2 + \dots + a_{jm}F_m + d_ju_j$$

where,

$z_j$  = variable  $j$  in standardized form;

$F_1$  = hypothetical factor;

$u_j$  = unique factor variable  $j$ ;

$a_{ji}$  = standardized multiple-regression coefficient  
of variable  $j$  on factor  $i$  (factor loading);

$d_j$  = standardized regression coefficient of  
variable  $j$  on unique factor  $j$ ; and

$j = 1, 2, \dots, n$

The following correlations are assumed to hold among the hypothesized variables:

$$r(F_i U_j) = 0$$

$$i = 1, 2, \dots, n; j = 1, 2, \dots, n; \text{ and } i \neq j$$

$$r(u_j u_k) = 0 \quad j \neq k$$

It is assumed that the unique factor ( $u_j$ ) is not correlated with the common factors nor with the unique factors associated with other variables. Because of this, it is assumed that any correlation between two variables is due to the common factors (14:471).

Two other important terms associated with factor analysis and used in the data analysis chapter are eigenvalue and communality. Communality is the proportion



of a variable's total variation that is involved in the patterns (20:465). It can be expressed by the formula

$$h_1^2 = a_{11}^2 + a_{12}^2 + a_{1i}^2$$

where,

$h_1^2$  = communality, and

$a_{ji}$  = standardized multiple-regression coefficient of variable j on factor i (factor loading)

Eigenvalue is a measure of the amount of variation accounted for by a pattern and is represented by the formula

$$\text{Eigenvalue} = \sum_{j=1}^n a_{ji}^2$$

A complete factor analysis plan involves the selection and use of a rotational method to arrive at a terminal solution. The unrotated factors in the initial factor analysis matrix define the most general patterns of relationship in the data. The rotated factors delineate the distinct "clusters" of relationships, if they exist (20:466). For this "final step" in factor analysis, two rotational methods may be used, oblique and orthogonal. These rotation methods rely on the same basic principles. However, the orthogonal method results in simpler and

theoretically more meaningful factor patterns. Because of this, orthogonal rotation was used in this study.

To summarize, this study used an R-factor analysis (correlations between variables), extracted by principal-component solution, then orthogonally rotated. These factors were then applied to a conceptual model for variable definition and hypotheses testing. These relationships were tested through the use of multiple regression analysis, which is discussed in the following section. All factor analysis work was performed using the standard Statistical Package for the Social Sciences (SPSS) Program.

#### Reliability

The SPSS subprogram "Reliability" was used to evaluate the reliability of the factor scales contained within the survey instrument used to gather data for this research project. Reliability is concerned with estimates of the degree to which the instrument is free of random or unstable error (5:132). Reliable instruments are robust. That is, they will provide consistent results, at different times and under different conditions, in replication of the research.

The concept of reliability refers to how accurate, on the average, the estimates of the true scores of the questions in the survey instrument are in the population

that was measured. In the population,  $\sigma(e)$  represents the variance of the errors of measurement,  $\sigma(t)$  represents the variance of the true scores, and  $\sigma(o)$  represents the variance of the observed scores where the observed score is the sum of the observations for a question. Also, the observed score is assumed to be the sum of the true score and the error. Thus, the reliability coefficient (R) is defined as:

$$\begin{aligned} R &= \sigma(t)/\sigma(o) \\ &= (\sigma(o) - \sigma(e))/\sigma(o) \\ &= 1 - \sigma(e)/\sigma(o) \end{aligned}$$

If all the variation in observed scores is due to errors of measurement, the reliability coefficient will be zero. If there is no error of measurement, the reliability coefficient will be one (10:111).

Reliability analysis was performed following factor analysis. Questions identified within each factor as having the highest factor loadings were selected for reliability testing. These questions were tested using Cronbach's coefficient alpha, which is the maximum likelihood estimate of the reliability coefficient.

#### Statistical Method

The conceptual model presented in Chapter II was the basis for the research hypotheses of research question

number one and indicated the directional relationships between the determinants, intervening variables, and the surrogate used for turnover - expressed career intent. Regression analysis is an appropriate statistical method when directional independent - dependent variable relationships are indicated.

Regression analysis measures the linear relationship between an independent variable,  $x$ , and a dependent variable,  $y$  (15:248).

The parametric tests are more powerful and are generally the tests of choice if their use assumptions are reasonably met...it is common to find such tests being used in circumstances where, under a strict interpretation, only nonparametric tests are appropriate [5:413].

Regression analyses were performed using the SPSS subprogram, REGRESSION (14:320-367).

Regression Coefficient, Beta (B).  $B$ , the regression coefficient of the independent variable, is of major concern in testing the statistical significance of the variable relationship presented by the regression analysis. The statistical significance of  $B$ , and, therefore of the regression analysis, was tested at the .05 level of significance for the  $F$  statistic. The positive or negative sign notation of the  $B$  coefficient indicates a direct or

inverse relationship between the regression variables. If the sign of B is positive, a direct relationship is indicated. If the sign of B is negative, an inverse relationship is indicated (14:323,326).

Coefficient of Determination ( $R^2$ ). If the relationships between the variables were demonstrated to be statistically significant, the coefficient of determination,  $R^2$ , was utilized to test the relative importance between the independent and dependent variables identified in the research hypotheses.

The coefficient of determination in a regression model,  $R^2$ , is the proportion of the variation that is "explained" by the regression line [15:257].

$R^2$  can take on values from zero to one. When  $R^2$  is equal to zero, then the independent variable, X, has explained none of the variability of the dependent variable, Y. If  $R^2$  is equal to one, then the independent variable, X, has explained all the variability of the dependent variable, Y.

Multiple Linear Regression. Multiple linear regression was used to detect and control for the existence of multicollinearity. The term multicollinearity refers to the situation where there is a high degree of correlation between two (or more) independent variables (15:295). This situation is evidenced when the portion of the variability of the dependent variable explained by the combined effect

of all the independent variables is less than the sum of the portions of the variability explained by each independent variable. Regression analysis was conducted with expressed career intent as the dependent variable. The independent variables used were the determinants and correlates depicted in the conceptual model (Figure 5).

Validation of Equation. The following procedures were undertaken to cross-validate the derived multiple regression equation.

- 1) A field survey of the questionnaire was conducted at the local Air Force Audit Agency offices. Not only did this provide a field test of the survey questionnaire, but it provided the necessary data input to construct the multiple regression equation, hereafter referred to as EQ<sub>1</sub>.

- 2) The data from the total population of current auditors was applied using EQ<sub>1</sub> to provide a comparison of the coefficients of determination, ( $R^2$ ).

#### Analytical Method

The survey questionnaire was designed to produce the need satisfaction scores described by Porter and Lawler (16:120-150). The need satisfaction scores were aggregated for the two populations (current & post dictive) and compared to the aggregated need satisfaction scores compiled by Smith and Uecker in their study of job satisfaction among

internal auditors (21:51,52). Appendix D provides a synopsis of the compared aggregated need satisfaction scores.

#### Assumptions

Inherent in any research is the acceptance of assumptions in regard to the survey instrument and the parameters of the population studied. Within this study, the following assumptions were recognized:

- 1) The survey instrument was valid and reliable.  
(See Chapter IV for validation and reliability data.)
- 2) The questions used for the measurement of variables were valid and reliable.
- 3) The respondees answered the questions correctly, honestly, and their responses reflected their true opinions.
- 4) The random variables tested were normally distributed.

## CHAPTER IV

### RESULTS AND ANALYSIS

This chapter presents the results of the application of the methodologies described in Chapter III. These results were analyzed to determine the significant factors affecting turnover of civilian auditors.

#### Overview

The purpose of the questionnaire was to identify and assess the importance of various factors of job satisfaction perceived by civilian auditors. This information could then be used in the development of a model that may be useful to Audit Agency management in future planning and decision-making.

Factor analysis was used to identify underlying patterns of relationships among the questionnaire responses and to reduce the data to a meaningful and workable quantity. Cronbach's coefficient alpha was used to determine the reliability of questions identified in each extracted factor. Finally, regression analysis was used to develop a model of the independent variables that most accurately relate to expressed career intent, used in this study as a surrogate for turnover.

#### Description of the Population

The target population of this thesis was the civilian auditor staff of the Air Force Audit Agency. The size of the



target population was estimated to be 577 in April 1981. No individuals or groups within the target population were intentionally excluded.

Of the 577 civilian auditors, 432 participated in the survey, representing a 75 percent response rate.

All of the responses were included in the demographic description of the population. The absence of individual responses to specific demographic questions resulted in varying totals between demographic categories. The tables reflect adjusted frequency percentages resulting from the loss of data.

Of the 432 who responded concerning functional job title, 227 were auditors, 79 were audit managers, and 43 were staff auditors (Table 2). The number of personnel surveyed ranged from 144 with none, to one supervising 21 or more (Table 3).

The General Schedule grades of respondees ranged from GS-5 to GS-14 and over. The modal grade was GS-11 with 142 responses, 99 were GS-12, and 82 were GS-13 (Table 4). The General Schedule Step had a modal step of one (158 responses), a mean between steps 3 and 4, and a median between steps 2 and 3 (Table 5).

Tenure of those responding was measured by time with AFSA in months and time in present position in months. The mean time with the AFSA was between 19 months and 25 months, with 252 of the respondees having been with the Agency over 3

years (Table 6). Tenure in position had a mean of between 19 and 25 months, 161 of the respondees had been in the same position for over 3 years (Table 7).

The average age of those responding was between 35 and 39 years of age, with 87.7% of the respondees being over the age of 30 (Table 8).

All of the auditors who responded had at least some college, with the average education being some graduate work. The modal education level was a bachelor's degree (Table 9).

Differentiation of the responding auditors by their sex revealed that 384 were male and 48 were female (Table 10). Of those who responded, 12.5% were of an ethnic origin other than white not of Hispanic origin (Table 11).

A total of 365 of the respondees were married (Table 12) and of those that were married, 179 had spouses that were employed outside the home for remuneration (Table 13).

The population can be characterized by the averages of each of the demographic elements.

Job Title	Auditor
Number of Personnel Supervised	None
Grade	GS-11/GS-12
General Schedule Step	3
Tenure with AFSA	19-25 Months
Tenure in Position	19-25 Months
Age	35-39

Education	Some Graduate Work
Sex	Male
Ethnic Origin	White, Not of Hispanic Origin
Marital Status	Married
Spouse Employed	49% yes, 51% no

---

Based on these averages, the population is represented by a composite individual of mature age who has attained Journeyman Auditor status, is working toward his graduate degree, and is married.

#### Factor Analysis

Questions 12 through 80 were analyzed using factor analysis procedures described in Chapter III. Questions 12 through 52 were analyzed using raw responses provided by respondents (using the 7-point Likert scale). Questions 53 through 80 were mathematically transformed into a new set of responses before being factor analyzed. These questions were developed in the questionnaire such that two responses were needed for each basic statement. For example, the statement "the feeling of security in my position," was answered by questions 63, "how much is there now?", and 64, "how much should there be?". To derive a score for this statement, question 64 was subtracted from question 63. The result of this was then used for factor analysis of the statement.

TABLE 2

FUNCTIONAL JOB TITLE

<u>CATEGORY</u>	<u>FREQUENCIES</u>		
	<u>ABSOLUTE</u>	<u>ADJUSTED (%)</u>	<u>CUMULATIVE (%)</u>
Other	4	.9	.9
Auditor	227	52.5	53.5
Staff Auditor	43	10.0	63.4
Office Chief	36	8.3	71.8
Branch Chief	27	6.3	78.0
Division Chief	8	1.9	79.9
Supervisory Auditor	8	1.9	81.7
Audit Manager	<u>79</u>	<u>18.3</u>	100.0
TOTAL	<u>432</u>	<u>100.0</u>	
Mean <u>2.71</u>	Mode <u>1.0</u>	Median <u>1.43</u>	

TABLE 3

NUMBER OF PERSONNEL SUPERVISED

<u>CATEGORY</u>	<u>FREQUENCIES</u>		
	<u>ABSOLUTE</u>	<u>ADJUSTED (%)</u>	<u>CUMULATIVE (%)</u>
None	144	79.6	79.6
1 to 2	5	1.2	80.8
3 to 5	37	8.6	89.4
6 to 8	36	8.3	97.7
9 to 12	5	1.2	98.9
13 to 20	4	.9	99.8
21 or More	<u>1</u>	<u>.2</u>	<u>100.0</u>
TOTAL	<u>432</u>	<u>100.0</u>	
Mean <u>1.54</u>	Mode <u>1.0</u>	Median <u>1.13</u>	

TABLE 4

GENERAL SCHEDULE (GS) GRADE

<u>CATEGORY</u>	<u>ABSOLUTE</u>	<u>FREQUENCIES</u>	
		<u>ADJUSTED (%)</u>	<u>CUMULATIVE (%)</u>
5	1	.2	.2
7	36	8.3	8.6
9	34	7.9	16.4
11	142	32.9	49.3
12	99	22.9	72.2
13	82	19.0	91.2
14 or Over	<u>38</u>	<u>8.8</u>	<u>100.0</u>
TOTAL		<u>432</u>	<u>100.0</u>
Mean 4.62		Mode <u>4.0</u>	Median <u>4.53</u>

TABLE 5

GENERAL SCHEDULE STEP

<u>CATEGORY</u>	<u>ABSOLUTE</u>	<u>FREQUENCIES</u>	
		<u>ADJUSTED (%)</u>	<u>CUMULATIVE (%)</u>
1	158	36.7	36.7
2	60	14.0	50.7
3	39	9.1	59.8
4	45	10.5	70.3
5-6	55	12.8	83.1
7-8	42	9.8	92.9
9-10	<u>31</u>	<u>7.2</u>	100.0
TOTAL	<u>430</u>	<u>100.0</u>	
Mean <u>3.05</u>		Mode <u>1.0</u>	Median <u>2.43</u>

TABLE 6

TENURE WITH AFAA IN MONTHS

<u>CATEGORY</u>	<u>FREQUENCIES</u>		<u>CUMULATIVE (%)</u>
	<u>ABSOLUTE</u>	<u>ADJUSTED (%)</u>	
1-6	18	6.5	6.5
7-12	39	9.0	15.5
13-18	45	10.4	25.9
19-24	19	4.4	30.3
25-36	49	11.3	41.7
37 and Over	<u>252</u>	<u>58.3</u>	100.0
TOTAL	<u>432</u>	<u>100.0</u>	
Mean	<u>5.80</u>	Mode	<u>7.0</u>
		Median	<u>6.64</u>

TABLE 7

TENURE IN POSITION IN MONTHS

<u>CATEGORY</u>	<u>FREQUENCIES</u>		<u>CUMULATIVE (%)</u>
	<u>ABSOLUTE</u>	<u>ADJUSTED (%)</u>	
Under 1	2	.5	.5
1-6	47	10.9	11.3
7-12	69	16.0	27.3
13-18	51	11.8	39.1
19-24	54	12.5	51.6
25-36	48	11.1	62.7
37 and Over	<u>161</u>	<u>37.3</u>	100.0
TOTAL	432	100.0	
Mean	<u>5.07</u>	Mode	<u>7.0</u>
		Median	<u>5.37</u>

TABLE 8

AGE (YEARS)

<u>CATEGORY</u>	<u>FREQUENCY</u>		
	<u>ABSOLUTE</u>	<u>ADJUSTED (%)</u>	<u>CUMULATIVE (%)</u>
20-24	9	2.1	2.1
25-29	44	10.2	12.3
30-34	103	23.9	36.2
35-39	111	25.8	62.0
40-49	98	22.7	84.7
50-59	59	13.7	98.4
60 and Over	<u>7</u>	<u>1.6</u>	<u>100.0</u>
TOTAL	<u>431</u>	<u>100.0</u>	

Mean 4.04Mode 4.0Median 4.03

TABLE 9

EDUCATION

<u>CATEGORY</u>	<u>FREQUENCY</u>		
	<u>ABSOLUTE</u>	<u>ADJUSTED (%)</u>	<u>CUMULATIVE</u>
<u>(%)</u>			
High School	0	0	0
Some College	6	1.4	1.4
Associate Degree	4	.9	2.3
Bachelors Degree	147	34.0	36.3
Some Graduate Work	123	28.5	64.8
Masters Degree	130	30.1	94.9
Graduate Work or Degree Above Masters	<u>22</u>	<u>5.1</u>	100.0
TOTAL	<u>432</u>	<u>100.0</u>	

Mean 5.00Mode 4.0Median 4.98

TABLE 10

SEX OF RESPONDENT

<u>CATEGORY</u>	<u>FREQUENCIES</u>		
	<u>ABSOLUTE</u>	<u>ADJUSTED (%)</u>	<u>CUMULATIVE (%)</u>
Male	384	88.9	88.9
Female	<u>48</u>	<u>11.1</u>	100.0
TOTAL	<u>432</u>	<u>100.0</u>	
Mean <u>1.12</u>	Mode <u>1.0</u>	Median <u>1.06</u>	

TABLE 11

ETHNIC ORIGIN

<u>CATEGORY</u>	<u>FREQUENCIES</u>		
	<u>ABSOLUTE</u>	<u>ADJUSTED (%)</u>	<u>CUMULATIVE (%)</u>
American Indian or Alaskan Native	4	.9	.9
Asian or Pacific Islander	12	2.8	3.7
Black, Not of Hispanic Origin	9	2.1	5.8
Hispanic	12	2.8	8.6
White, Not of Hispanic Origin	378	87.5	96.1
Other	<u>17</u>	<u>4.0</u>	100.0
TOTAL	<u>432</u>	<u>100.0</u>	
Mean <u>4.85</u>	Mode <u>5.0</u>	Median <u>4.97</u>	



TABLE 12

MARITAL STATUS

<u>CATEGORY</u>	<u>FREQUENCIES</u>		
	<u>ABSOLUTE</u>	<u>ADJUSTED (%)</u>	<u>CUMULATIVE (%)</u>
Single	67	15.5	15.5
Married	<u>365</u>	<u>84.5</u>	100.0
TOTAL	<u>432</u>	<u>100.0</u>	

TABLE 13

SPOUSE EMPLOYED OUTSIDE THE HOME

<u>CATEGORY</u>	<u>FREQUENCIES</u>		
	<u>ABSOLUTE</u>	<u>ADJUSTED (%)</u>	<u>CUMULATIVE (%)</u>
Yes	179	49.0	49.0
No	<u>186</u>	<u>51.0</u>	100.0
TOTAL	<u>365</u>	<u>100.0</u>	

### Number of Factors

The SPSS factor analysis procedure yielded 12 factors with eigenvalues greater than one. This cutoff was used because additional factors did not account for significantly more variability in the data nor did they contain sufficient high factor loadings to be meaningful. Table 14 lists the final factors. Factor 3, organizational commitment, is equivalent to the hypothesized dependent variable, expressed career intent. The remaining eleven factors comprise discreet groupings of the hypothesized determinant variables described in Figure 5, Chapter II, and the intervening variable, opportunity.

### Reliability

Internal consistency of the survey questions was developed for each of the 12 factors using Cronbach's coefficient alpha (as described in Chapter III). The coefficient alpha value was derived for the questions having the highest loadings in each of the factors. The question numbers used in each computation along with the coefficient alpha value will be found with the factor descriptions that follow.

Interpretation of the coefficient alpha value is a subjective matter. In this study, the elements of the population were people. Because of large differences in experience and perceptions, the responses of different people

AD-A108 407

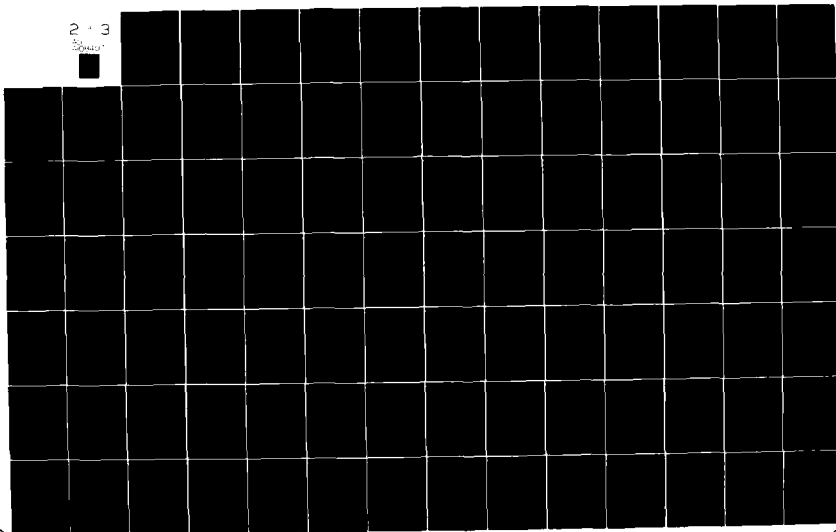
AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OH SCHOOL--ETC F/G 5/9  
JOB SATISFACTION AND CIVILIAN AUDITOR TURNOVER WITHIN THE AIR F--ETC(U)  
JUN 81 G E HANBY, B K ZIMMERMAN  
AFIT-LSSR-5-81

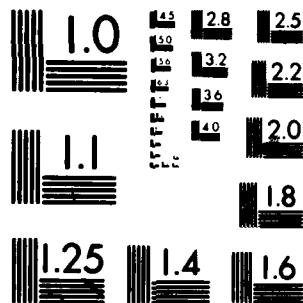
UNCLASSIFIED

NL

2 \* 3

20  
200000





MICROCOPY RESOLUTION TEST CHART  
NATIONAL BUREAU OF STANDARDS 1963-A

TABLE 14  
QUESTIONNAIRE FACTOR ANALYSIS

<u>FACTOR</u>	<u>PERCENT OF TOTAL VARIANCE</u>	<u>HIGHEST LOADING</u>	<u>LOADINGS ABOVE .4</u>
1. Supervisory Style	24.8	.89	10
2. Psychological Needs	8.1	.72	10
3. Organizational Commitment	5.2	.77	9
4. Promotion	3.9	.73	4
5. Job Autonomy	3.6	.78	4
6. Peer Group Integration	2.9	.80	3
7. Task Repetitiveness	2.7	.89	2
8. Skill-Task Variety	2.7	.64	4
9. Opportunity	2.5	.71	3
10. Job Stability	2.2	.63	3
11. Work Environment	1.9	.74	3
12. Adversary Position	1.8	.62	3

ANALYSIS INCLUDED 56 VARIABLES.

TOTAL VARIANCE ACCOUNTED FOR = 62.4

to the same question may be highly variable. For this reason, a fixed cutoff point for describing acceptable reliability is questionable. In general, the higher the coefficient alpha, the better the internal consistency.

#### Factors

Factor 1: supervisory style. Factor 1 accounted for 24.8 percent of the total variation among all questionnaire items and was by far the most significant factor (eigenvalue = 13.7). This factor refers to the ability of the supervisor to make decisions, motivate subordinates, and provide effective leadership for the work group. This factor indicated that the supervisor is judged on his ability to establish good work procedures, help subordinates improve their performance, make decisions, provide effective feedback, encourage ideas from subordinates, represent the work group to outside groups, and perform effectively as a manager.

TABLE 15

#### FACTOR 1 - SUPERVISORY STYLE

<u>QUESTION NUMBER</u>	<u>LOADING</u>
44	.89
35	.88
51	.82
47	.80
45	.80
28	.78
52	.74
36	.74
43	.73
34	.68

COEFFICIENT ALPHA = .93

Factor 2: psychological needs. Factor 2 accounted for 8.1 percent of the total variation among the questions. This factor refers to the psychological characteristics associated with an individual's job. These characteristics closely follow Maslow's need hierarchy and include security, social, esteem, autonomy, and self-actualization needs. The questions in this factor develop these needs in terms of the desire for self-fulfillment, the feeling of worthwhile accomplishment, personal growth and development, prestige inside and outside of the organization, and independent thought and action.

TABLE 16

FACTOR 2 - PSYCHOLOGICAL NEEDS

<u>QUESTION NUMBER</u>	<u>LOADING</u>
65-66	.72
53-54	.69
55-56	.67
69-70	.66
71-72	.65
57-58	.60
73-74	.59
61-62	.57
67-68	.55
59-60	.47
31	.42

COEFFICIENT ALPHA = .88

Factor 3: organizational commitment. Factor 3 accounted for 5.2 percent of the total variation among the questions. This factor refers to an individual's commitment to the organization. This is manifested through pride in the

organization, how well the job satisfies one's vocational desires, whether personal goals and values are compatible with the organization's goals and values, the amount of effort the individual is willing to exert, and an expression of intent to remain with the organization.

TABLE 17

FACTOR 3 - ORGANIZATIONAL COMMITMENT

<u>QUESTION NUMBER</u>	<u>LOADING</u>
18	.77
17	.76
21	.75
37	.71
42	.68
16	.58
31	.42
41	.42

COEFFICIENT ALPHA = .87

Factor 4: promotion. Factor 4 accounted for 3.9 percent of the total variation among the questions. This factor refers to the individual's perception of his or her chance to be aware of promotion opportunities and to be considered for promotion based on ability in fair competition with the peer group.

TABLE 18

FACTOR 4 - PROMOTION

<u>QUESTION NUMBER</u>	<u>LOADING</u>
24.	.73
25	.67
12	.49
13	.46

COEFFICIENT ALPHA = .72



Factor 5: job autonomy. Factor 5 accounted for 3.6 percent of the total variation among the questions. This factor refers to the perceived degree of control that supervisors exercise over subordinates. Autonomy can be positive or negative depending on the perceptions of the degree to which the supervisor controls work, makes decisions without group involvement, emphasizes the need to accomplish more than other work groups, and requires that directions be followed exactly.

TABLE 19

FACTOR 5 - JOB AUTONOMY

<u>QUESTION NUMBER</u>	<u>LOADING</u>
46	.78
49	.69
50	.63
48	.49

COEFFICIENT ALPHA = .63

Factor 6: peer group integration. Factor 6 accounted for 2.9 percent of the total variation among the questions. This factor refers to how the individual perceives and interacts with the work group. This is described in terms of the quality and quantity of the work group's output and how effectively the work group functions as a team.

TABLE 20

FACTOR 6 - PEER GROUP INTEGRATION

<u>QUESTION NUMBER</u>	<u>LOADING</u>
39	.80
40	.74
32	.42

COEFFICIENT ALPHA = .75

Factor 7: task repetitiveness. Factor 7 accounted for 2.7 percent of the total variation among the questions. This factor refers to the desire to frequently perform the same job or task.

TABLE 21

FACTOR 7 - TASK REPETITIVENESS

<u>QUESTION NUMBER</u>	<u>LOADING</u>
15	.89
29	.89

COEFFICIENT ALPHA = .82

Factor 8: skill task variety. Factor 8 accounted for 2.7 percent of the total variation among the questions. This factor refers to the ability of individuals to make use of a variety of skills and talents in performing their jobs and the degree of latitude available in establishing the work schedule and procedures to complete a job or task.

TABLE 22

FACTOR 8 - SKILL TASK VARIETY

<u>QUESTION NUMBER</u>	<u>LOADING</u>
14	.64
19	.51
30	.44

COEFFICIENT ALPHA = .51

Factor 9: opportunity. Factor 9 accounted for 2.5 percent of the total variation among the questions. This factor refers to the perception of the demand for one's skills and abilities in the job market and whether one could expect to receive more or less pay for those skills and abilities if the decision was made to withdraw from the organization.

TABLE 23

FACTOR 9 - OPPORTUNITY

<u>QUESTION NUMBER</u>	<u>LOADING</u>
22	.71
38	.61

COEFFICIENT ALPHA = .48

Factor 10: job stability. Factor 10 accounted for 2.2 percent of the total variation among the questions. This factor refers to the feeling of security an individual has about his job. Security, in this study, takes the following meaning: (1) an individual will be able to remain in the position; (2) an individual will be able to develop secure

and close friendships while in the position; and (3) the feeling of security in understanding what to expect of the position.

TABLE 24

FACTOR 10 - JOB STABILITY

<u>QUESTION NUMBER</u>	<u>LOADING</u>
75-76	.63
63-64	.60
23	.31

COEFFICIENT ALPHA = .29

NOTE: The coefficient alpha did not improve significantly when the lowest loading question (no. 23) was deleted from the factor.

Factor 11: work environment. Factor 11 accounted for 1.9 percent of the total variation among the questions. This factor refers to the tangible aspects of the job. These are perceived in terms of adequate work space, tools and materials, and individual influence on the work schedule.

TABLE 25

FACTOR 11 - WORK ENVIRONMENT

<u>QUESTION NUMBER</u>	<u>LOADING</u>
20	.74
27	.59
79-80	.46

COEFFICIENT ALPHA = .41

Factor 12: adversary position. Factor 12 accounted for 1.8 percent of the total variation among the questions. This factor refers to the perception of adversary relationships between the individual and management of other organizations (the traditional auditor/management position), between the individual and the supervisor during work reviews, and among coworkers in perceived effort expended by each individual of the work group.

TABLE 26

FACTOR 12 - ADVERSARY POSITION

<u>QUESTION NUMBER</u>	<u>LOADING</u>
33	.62
77-78	.52
26	.51

COEFFICIENT ALPHA = .34

The factors derived by factor analysis can now be combined with the correlate data illustrated in Figure 5 to produce an intermediate job satisfaction model, which is illustrated in Figure 6.

Regression Analysis

Overview

As stated in Chapter III, regression analysis was used to evaluate the directional independent/dependent variable relationships in order to test the hypotheses posed in Chapter II.

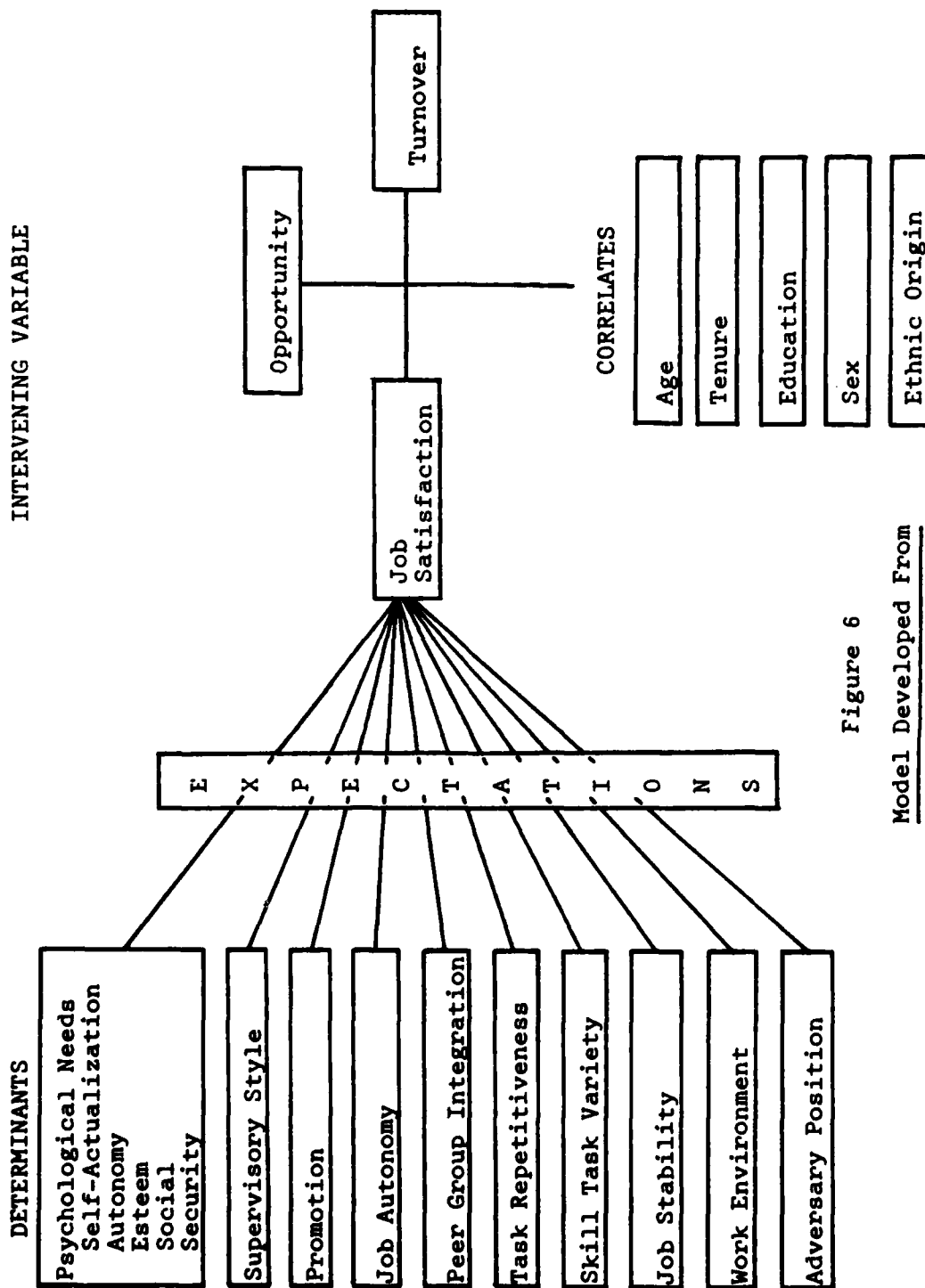


Figure 6  
Model Developed From  
Factor Analysis

Factor analysis derived 12 factors, one of which was the dependent variable, organizational commitment. Orthogonal rotation insured that each of the factors had minimum correlation with the other factors. This is necessary to provide discreet groupings of related data. However, it masks the actual dependent/independent relationships that may exist in the data, which is the basis for regression analysis.

To overcome this problem the following procedures were used prior to regression analysis:

- 1) All of the data were factor analyzed and factors were extracted and identified.
- 2) Those questions identified as loading significantly on the dependent variable "organizational commitment" (see Table 17) were then removed from the data base and factor analysis was performed on only the data associated with the independent variables. This yielded eleven orthogonally rotated factors with associated factor loadings.
- 3) Factor analysis was then performed on the questions associated with the dependent variable. The result was one factor with associated factor loadings.
- 4) Regression analysis was then performed using the procedures described in Chapter III and the following paragraphs.

In this study, the potential independent variables consist of the demographics obtained by answers to questions 1 through 11 of the survey instrument, as well as the eleven

dependent variable factors developed through factor analysis. The twelfth factor, Organizational Commitment, is the equivalent of expressed career intent and was used in regression as the dependent variable. Independent variables were considered for inclusion in the regression equation at a .05 significance level for the F statistic. Input values used for regression analysis consisted of:

- 1) Factor scores for the determinant variables derived through factor analysis;
- 2) Scaled scores for demographic variables (correlates).

#### Results of Regression Analysis

Regression analysis yielded a multiple regression equation that contained ten variables. The symbolic form of this equation is listed on Table 27 along with a summary of the model. Overall, the model explained 58 percent of the variance in the data ( $R^2 = .58$ ) and had a correlation coefficient of .76, indicating high direct correlation between the ten independent variables and the dependent variable, organizational commitment. The impact of each variable is described in Table 28. As indicated in this table, the psychological needs variable was the most significant, explaining 24.4 percent of the variability in the data. The next five variables (promotion through opportunity), combined with psychological needs, accounted for most of the variability (54.2%) explained by the equation.



TABLE 27

SIGNIFICANT VARIABLES RESULTING FROM  
REGRESSION ANALYSIS WITH ORGANIZATIONAL COMMITMENT AS THE  
DEPENDENT VARIABLE

<u>VARIABLE NAME</u>	<u>STANDARDIZED BETA COEFFICIENT</u>	<u>95% CONFIDENCE INTERVAL</u>	<u>SIGNI- FICANCE LEVEL</u>	<u>F STATISTIC</u>
Psychological Needs	.495	.430 .555	.001	243.45
Promotion	.372	.312 .439	.001	133.22
Supervisory Style	.221	.159 .284	.001	47.88
Skill Task Variety	.220	.155 .285	.001	44.42
Peer Group Integration	.187	.124 .249	.001	34.64
Opportunity	-.176	-.239-.113	.001	30.47
Adversary Position	-.120	-.180-.055	.001	14.05
Work Environment	.111	.044 .173	.001	11.37
Age	.111	.036 .140	.002	9.93
Tenure	-.083	-.084-.002	.026	5.02

REGRESSION EQUATION:

Organizational Commitment (Y) = -.544 (Constant) +  
.495 (Psychological Needs) + .372 (Promotion) +  
.221 (Supervisory Style) + .220 (Skill Task  
Variety) + .187 (Peer Group Integration) -  
.171 (Opportunity) - .120 (Adversary Position) +  
.111 (Work Environment) + .111 (Age) - .083  
(Tenure)

TABLE 28  
VARIATION EXPLAINED ( $R^2$ ) BY THE REGRESSION EQUATION

<u>VARIABLE</u>	<u>PERCENT OF TOTAL VARIANCE EXPLAINED (CHANGE IN <math>R^2</math>)</u>	<u>CUMULATIVE PERCENT OF TOTAL VARIANCE EXPLAINED (CHANGE IN <math>R^2</math>)</u>
Psychological Needs	.244	.244
Promotion	.127	.372
Supervisory Style	.053	.425
Skill Task Variety	.044	.469
Peer Group Integration	.037	.507
Opportunity	.035	.542
Adversary Position	.013	.555
Work Environment	.012	.567
Age	.006	.573
Tenure	.005	.579

Through the use of regression analysis, the models presented in Figures 5 and 6 can now be refined to include only those determinants of job satisfaction found to be significant and included in the regression equation, and the significant correlates and intervening variables. This model is depicted in Figure 7. In addition, the hypotheses posed in Chapter II can now be tested.

#### Test of Hypotheses

Hypothesis 1 - The negative beta coefficient for the variable "adversary position" indicated that an increase in the level of this job satisfaction determinant should result in a decrease in organizational commitment. As a result, this hypothesis could not be rejected and this determinant was included in the regression equation.

Hypothesis 2 - Regression analysis indicated that the job satisfaction determinant, level of pay, was not a significant factor of organizational commitment. Therefore, this hypothesis was rejected and it can be stated, from the data, that an increase in pay should not result in increased organizational commitment. This factor was not included in the regression equation.

Hypothesis 3 - The positive beta coefficient for the variable "promotion", meaning promotion potential, indicated that this job satisfaction determinant is a significant factor of organizational commitment. Therefore, this hypothesis could not be rejected and this determinant was included in the regression equation.

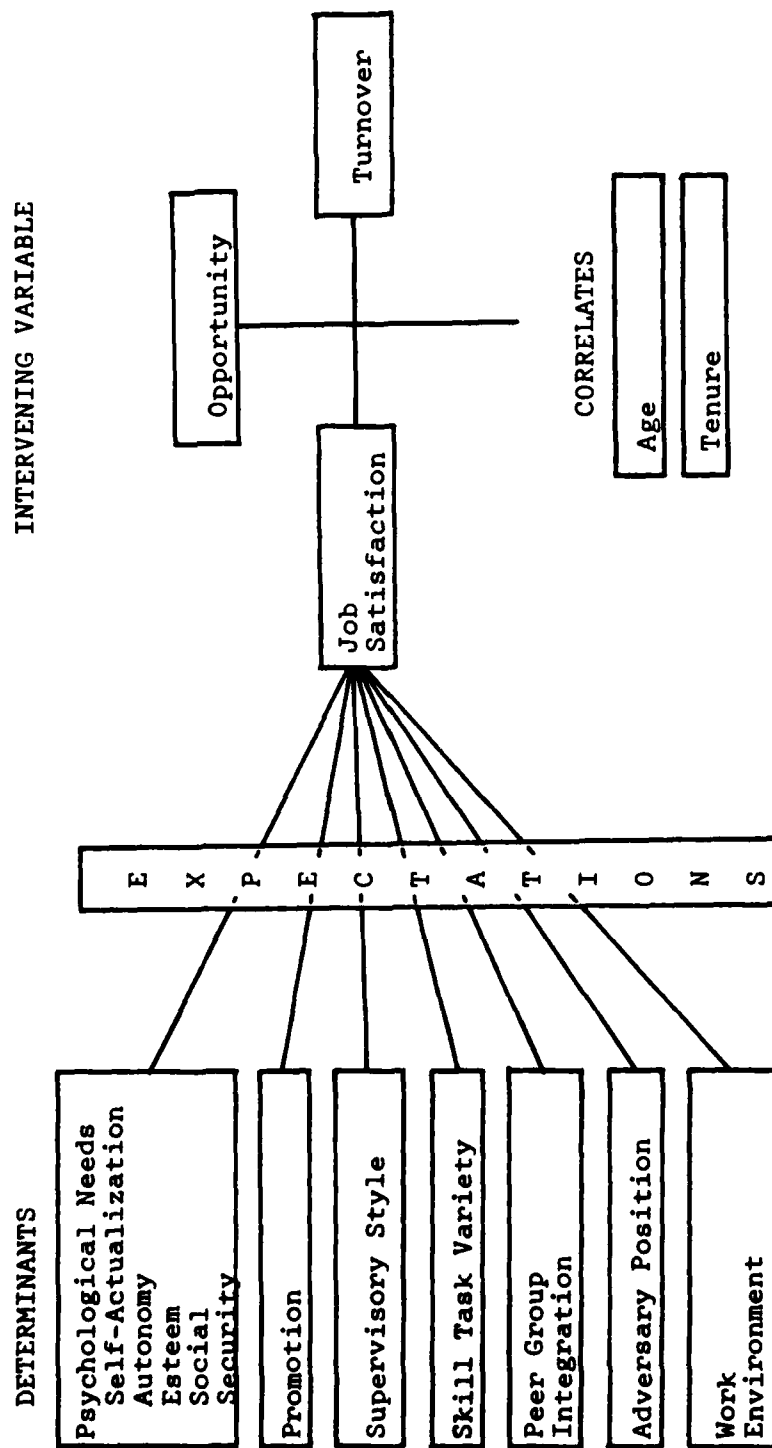


Figure 7  
Synthesized Model

Hypothesis 4 - The positive beta coefficient for the job satisfaction determinant "peer group integration" indicated that an increase in this variable should result in increased organizational commitment. Therefore, this hypothesis could not be rejected and this factor was included in the regression equation.

Hypothesis 5 - In factor analysis, the theoretical elements of role clarity were not distinguishable as individual elements of job satisfaction. Rather, this variable was subsumed into factors called security, promotion, and skill task variety. Therefore, this hypothesis cannot be tested and was not included as part of the final model.

Hypothesis 6 - Regression analysis indicated that job autonomy was not a significant job satisfaction determinant in predicting organizational commitment. Therefore, this hypothesis was rejected. It should be noted, however, that autonomy was included by factor analysis as a portion of psychological needs and could have some impact on organizational commitment through that variable.

Hypothesis 7 - Regression analysis indicated that task repetitiveness was not a significant job satisfaction determinant in predicting organizational commitment. Therefore, this hypothesis was rejected since the data indicated that an increase in task repetitiveness should not result in a decrease in organizational commitment. This factor was not included in the regression equation.

Hypothesis 8 - The positive beta coefficient for the job satisfaction determinant "supervisory style" indicated that increased supervisory effectiveness should lead to increased organizational commitment. Therefore, this hypothesis could not be rejected and this determinant was included in the regression equation.

Hypothesis 9 - Organizational commitment was not extracted by factor analysis as a job satisfaction determinant. Rather, it was developed as the equivalent of career intent, the dependent variable in the regression analysis. Therefore, this hypothesis could not be tested.

Hypothesis 10 - The job satisfaction determinant "job content" was subsumed into the determinant "skill task variety" by factor analysis. Therefore, this hypothesis could not be tested and this variable was not included in the regression equation. However, "skill task variety" was a significant job satisfaction determinant in predicting organizational commitment and was included in the regression equation.

Hypothesis 11 - The job satisfaction determinant "similarity of job content with vocational interest" was subsumed into organizational commitment through factor analysis. Therefore, this hypothesis could not be tested as an individual element of organizational commitment and was not included in the final model.

Hypothesis 12 - The data indicated that age is a significant correlate of organizational commitment. Therefore,

this hypothesis was rejected and age was included in the regression equation. The positive beta coefficient for the variable "age" indicated that as age increased, organizational commitment increased.

Hypothesis 13 - The data also indicated that tenure is a significant correlate of organizational commitment. This hypothesis was also rejected and tenure was included in the final model. The negative beta coefficient for the variable "tenure" indicated that as tenure with the organization increased, organizational commitment decreased.

Hypotheses 14-16 - The data indicated that education, sex, and ethnic origin were not significant correlates of organizational commitment. These hypotheses were accepted and these correlates were not included in the regression equation.

Hypothesis 17 - The negative beta coefficient for the variable "opportunity" indicated that an increase in perceived opportunity should result in a decrease in organizational commitment. Therefore, this hypothesis was rejected. This variable was included in the regression equation.

### Analytical Analysis

#### The Data-Gathering Model

One of the objectives of the research involved in this thesis effort (Objective 3) was to obtain and evaluate comparative statistics on AFAA civilian auditors and to compare these statistics to auditors and accountants in other

public and private employment. Contained within the survey instrument were the measures of satisfaction developed in 1961 by Porter (16) which were based largely upon Maslow's theory (12) of a hierarchy of needs. A comparison of Porter's need hierarchy to that of Maslow's is presented here from lower order to higher order needs.

<u>MASLOW NEEDS</u>	<u>PORTER NEEDS</u>
1. Physiological	1. Security
2. Safety	2. Social
3. Social	3. Esteem
4. Esteem	4. Autonomy
5. Self-Actualization	5. Self-Actualization

Porter developed his questionnaire to explore managerial perceptions in regard to the physiological characteristics of their job. Porter modified Maslow's need hierarchy by eliminating the physiological (food, clothing, shelter, etc.) and differentiating between esteem and self-actualization needs by adding the category Autonomy Needs.

A total of 12 questions were used to develop the amount of perceived need deficiency score. For each question there were two responses required. For example, to measure the security need, the question was asked:

The feeling of security in my position:

63. How much is there now?

64. How much should there be?



Each response was measured on a 7-point Likert scale ranging from (1) None, to (7) a very great amount. In order to calculate the perceived need deficiency scores, the response to "how much is there now" was subtracted from "how much should there be". The possible score results had a range from -6 to +6. The larger the positive score, the greater the perceived need deficiency. The need satisfaction items and the questionnaire elements (parenthesis) that they were comprised of were:

1. Security need:

a. The feeling of security in my position  
(63-64);

2. Social needs:

a. The opportunity, in my position, to give assistance to other people: (71-72);

b. The opportunity to develop close friendships in my position: (75-76).

3. Esteem needs:

a. The feeling of self-esteem a person gets from being in my position: (53-54);

b. The prestige of my position within the Air Force Audit Agency (that is, the regard received from others in the Agency): (59-60);

c. The prestige of my position outside the Air Force Audit Agency (that is, the regard received from others not in the Agency): (67-68).

4. Autonomy needs:

- a. The opportunity for independent thought and action in my position: (61-62);
- b. The authority connected with my position: (55-56);
- c. The opportunity, in my position, for participating in the setting of goals: (73-74).

5. Self-Actualization needs:

- a. The opportunity for personal growth and development in my position: (57-58);
- b. The feeling of self-fulfillment a person gets from being in my position (that is, the feeling of being able to use one's own unique capabilities, realizing one's potentialities): (65-66);
- c. The feeling of worthwhile accomplishment in my position: (69-70).

Comparative perceived need deficiency scores were obtained from studies done by Smith and Uecker (21:48-53), and Amernic, Aranya and Pollock (1:38-42) of job satisfaction levels for accountants, auditors and managers. Table 29 provides a schedule of the comparative need deficiency scores by job framework. Appendix C lists separately the comparative data by Job Title for each job. Appendix C also contains cross-tabulations of need deficiency scores by various demographic elements (sex, age, ethnic origin, grade (GS), and functional job title). In addition, the frequency of

TABLE 29

## SCHEDULE OF NEED DEFICIENCY SCORES

NEED CATEGORY	AFAA CIVILIAN AUDITORS											AVERAGE (1-11)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	
SELF-ACTUALIZATION	1.741	1.294	0.923	1.033	1.010	0.649	1.239	1.157	1.030	0.787	0.996	0.983
AUTONOMY	1.394	1.149	0.734	0.886	0.840	0.240	0.833	0.850	0.697	0.766	0.676	0.728
ESTEEM	1.644	1.142	0.452	0.722	0.540	0.390	0.742	0.808	0.645	0.652	0.572	0.648
SOCIAL	1.159	0.640	0.370	0.458	0.320	0.275	0.535	0.476	0.247	0.384	0.455	0.402
SECURITY	1.053	0.495	0.286	0.500	0.280	0.407	0.597	-.021	0.553	0.362	0.491	0.434
AVERAGE SCORE	1.398	0.944	0.553	0.720	0.598	0.392	0.789	0.654	0.634	0.590	0.638	0.639

Scores represent average (arithmetic mean) need deficiency scores.

The greater the average, the less the perceived need satisfaction.

Descriptions of compared populations:

- (1) Internal auditors (Table 42)
- (2) Mid-level accountants employed by big eight accounting firms (Table 43)
- (3) Mid-level accountants employed by non-big eight accounting firms (Table 44)
- (4) Mid-level managers (Table 45)
- (5) Partner in chartered accountant firm or sole practitioner (Table 46)
- (6) Employees in chartered accountant firms (Table 47)
- (7) Chartered accountants employed by government or other public institutions (Table 48)
- (8) Chartered accountants employed in manufacturing (Table 49)
- (9) Chartered accountants employed in financial institutions (Table 50)
- (10) Chartered accountants employed in retail institutions (Table 51)
- (11) Chartered accountants employed in other institutions (Table 52)

TABLE 30  
COMPARATIVE MEASURES OF JOB SATISFACTION  
BY INDIVIDUAL QUESTION

<u>MEASURES</u>	<u>SCORES</u>	
	<u>AFAA CIVILIAN AUDITORS</u>	<u>CHARTERED ACCOUNTANTS EMPLOYED BY GOVERNMENT OR PUBLIC INSTITUTIONS</u>
1. Security Needs		
a. Feeling of Security	1.053	-.021
2. Social Needs		
a. Opportunity to give assistance	1.326	0.500
b. Opportunity to develop close friendships	0.667	0.451
3. Esteem Needs		
a. Feeling of self-esteem	1.806	0.879
b. Prestige within AFAA	1.519	0.800
c. Prestige outside AFAA	1.632	0.745
4. Autonomy Needs		
a. Opportunity for independent thought and action	0.993	0.841
b. Authority connected with position	1.569	0.847
c. Opportunity for participating in setting of goals	1.660	0.862
5. Self-Actualization Needs		
a. Opportunity for personal growth and development	1.350	1.248

(TABLE 30 CONTINUED)

b.	Feeling of self-Fulfillment	1.771	1.083
c.	Feeling of worthwhile Accomplishment	2.065	1.139

TABLE 31

SELECTED NEED DEFICIENCY SCORES

<u>CATEGORY</u>	<u>SCORES</u>			
	<u>AFAA</u> <u>AUDITORS</u>	<u>INTERNAL</u> <u>AUDITORS</u>	<u>CA's IN</u> <u>GOVT.</u>	<u>COMPOSITE</u> <u>AVERAGE</u>
Self - Actualization	1.741	1.294	1.157	0.983
Autonomy	1.394	1.149	0.850	0.728
Esteem	1.644	1.142	0.808	0.648
Social	1.159	0.640	0.476	0.402
Security	<u>1.053</u>	<u>0.495</u>	<u>-.021</u>	<u>0.434</u>
AVERAGE	<u>1.398</u> <del>1.398</del>	<u>0.944</u> <del>0.944</del>	<u>0.654</u> <del>0.654</del>	<u>0.639</u> <del>0.639</del>

NOTE: The greater the score, the less the perceived need satisfaction.

responses to each need satisfaction item and its elements is provided in Table 30.

#### Implications of Analysis

As may be observed in Table 29, the need deficiency scores of AFAA civilian auditors exceed the need deficiency scores of all the comparative respondents in all the elements. A comparison of the scores of AFAA civilian auditors, internal auditors, chartered accountants employed by governmental or public institutions (Table 31), and the composite average of comparative responses are provided in Table 29.

Noticeable in Tables 29 and 31 is an anomaly from a general trend in the directional magnitude of the scores. Generally, the level of satisfaction decreases as one moves up the need hierarchy. In the case of AFAA civilian auditors, the need category "esteem" has a higher level of esteem need deficiency than their professional counterparts relative to the higher level needs. Further support for this contention is provided by observing that the largest distance between need categories is between social needs and esteem needs for AFAA civilian auditors and internal auditors (Table 31). In comparing the differences contained in the comparative tables of Appendix C (Tables 42-52) it becomes apparent that the largest difference is contained within the esteem need category.

A further disparity in the comparative data is contained in the security need scores. Not only do the AFAA civilian auditors reflect the highest need deficiency in this category, their score is approximately 2.5 times the average security need score. The largest difference exists between AFAA civilian auditors and chartered accountants employed by government or other public agencies (Table 31). Considering that both classes are protected in their positions by civil service provisions, the difference between the scores assumes major proportions. The difference between AFAA civilian auditor security need responses and those of the compared job frameworks ranges from 0.229 to 1.074. The cross tabulations contained in Appendix C provide a comparison of security need responses by age, sex, ethnic origin, grade, and functional job title.

The results of these comparisons can only be viewed as tentative. Differences in the demographic characteristics of the groups as well as chronological differences in data collection may contribute significantly to the differences found in the comparisons.

## CHAPTER V

### DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

#### Discussion

The literature has identified job satisfaction and its relationship to job turnover as a pervasive multi-dimensional concept. In investigating the nature of this concept, many dynamics have been hypothesized. The dynamics of the environment and the individual's perception of these dynamics were observed from prior research to be a foundation upon which an investigation into the conceptualization of job satisfaction and civilian auditor turnover within the Air Force Audit Agency could be conducted.

The objectives of this study were: (1) to identify the significant factors contributing to the turnover of civilian auditors within the Air Force Audit Agency; (2) to develop a model quantifying the relationships between employee attitudes, opinions and perceptions about their job and turnover; and (3) evaluate managerial controls over the identified significant factors of turnover. The Air Force Audit Agency is a unique entity within the United States Air Force. However, the role of the civilian auditor is not unique in regard to the internal auditing profession. The purposes are therefore desirable not only because of the potential benefit accruing to AFAA management but to the profession as a whole.



The job satisfaction survey was systematically developed in fulfilling the purposes of this study. Chapter IV described in detail the processes of factor analysis, reliability testing and multiple regression analysis utilized in developing the synthesized model of Chapter IV from the conceptual model developed in Chapter II.

The model structure depicted in Figure 7 categorizes the determinants of job satisfaction, correlates of turnover, and intervening variable identified as significant factors of turnover. Following, in the conclusions section, each significant factor will be commented upon and any specific recommendations drawn. Within the Recommendations section, global recommendations will be made for the study taken as a whole.

### Conclusions

#### Determinants of Job Satisfaction

The significant determinants of job satisfaction as identified through the research methodology were, in order of significance:

Psychological Needs

Promotion

Supervisory Style

Skill-Task Variety

Peer Group Integration

Adversary Position

Work Environment

These determinants equate to a numeric evaluation of job satisfaction for civilian auditors employed by the Air Force Audit Agency. As the numeric valuation of job satisfaction increases, the individual's propensity to remain with the organization will increase subject to the effects of other variables.

Psychological needs. This, the most significant factor, is comprised of the security, social, esteem, autonomy, and self-actualization needs. The analytical analysis discussion contained in Chapter IV provides a comprehensive evaluation of the levels of psychological need for civilian auditors in the AFAA. As the perceived level of psychological need satisfaction increases, the level of job satisfaction will increase. In relation to other auditor, accountant, and managerial job frameworks, the AFAA civilian auditor has higher deficiency levels in the psychological need categories (Table 29). An incremental change in the psychological need factor would result in the largest impact upon career intent.

Promotion. This factor consists of an individual's perceptions in regard to the opportunity to be aware of promotion opportunities and to be considered for promotion based on ability in equitable competition. As the perceived level of promotional opportunities increases, the level of job satisfaction will increase. A recent increase in the civilian auditor journeyman grade from GS-11 to GS-12 will provide increased promotion opportunities for individuals up to the grade of GS-12.

Supervisory Style. This factor relates to the ability of supervisors to make decisions, motivate subordinates, and provide effective leadership. Contained within this criteria is the supervisor's ability to establish good work procedures, help subordinates improve their performance, provide effective feedback, encourage ideas from subordinates, and represent the work group to outside entities. If the perceived level of this factor increases the level of job satisfaction will tend to increase.

Skill Task Variety. Skill-Task Variety as a factor provides for the individual's perceptions of opportunities to make use of their skills and abilities in the performance of their jobs. In addition, it relates to the degree of latitude available to the auditor in establishing work schedules and procedures necessary to complete a job or task. An increase

in the factor Skill-Task Variety tends to precipitate an increase in the individual's perception of job satisfaction.

Peer Group Integration. This factor consists of an individual's perception and attitudes in regard to personal interaction within the work group in the performance of the job. It relates to the quality and quantity of the work groups output and how effective the work group performs as a team. An increase in the individual's perception of this factor tends to result in an increase in the individual's level of job satisfaction.

Adversary Position. An adversary relationship can exist between the auditor and management, subordinate and supervisor, and the individual and his peers. This factor may consist of any or all of these positions. The most obvious, and potentially most significant, is the traditional auditor/management relationship that is the natural result of management's perception of the auditor's role in the organization. The subordinate supervisor adversary position may result from the supervisor's responsibility to critically review the work of the professional auditor. Any decrease in the perception of an adversary position will tend to result in an increase in job satisfaction.

Work environment. Work environment consists of the tangible elements of the job. Individuals will perceive varying levels of satisfaction with such things as the adequacy of the work space provided, the adequacy of tools and materials at their disposal, and the ability to exert influence on their work schedule. If there is a perceived increase in this factor, the result will be an increase in individual job satisfaction.

#### Intervening Variable-Opportunity

The opportunity for employment outside the organization intervenes between job satisfaction and turnover. Individuals perceive levels of opportunity, depending on the demand for their skills and the economic situation at the time. Management has little or no control over this variable, since a relatively satisfied individual may withdraw from the organization based strictly on perceived opportunity. There is an inverse relationship between perceived opportunity and turnover. That is, individuals who perceive little opportunity for outside employment will probably express a high level of intent to remain with the organization even though they may display some characteristics of job dissatisfaction.

### Correlate Variables

The significant correlates of turnover identified through the research methodology were chronological age and tenure with the organization. The correlates do not indicate causation. Rather, they are indicators to which turnover can be related. Combined with the determinant variables and the intervening variable previously described, numerical values of the correlates can be used in the regression equation developed in Chapter IV to evaluate the propensity for selected individuals to remain with the organization.

Age. Chronological age demonstrated a positive relationship to career intent, so as age increases the level of express career intent should also increase.

Tenure. Tenure with the organization demonstrated a negative relationship with career intent. This is contradictory to the results of previous studies and seemingly in conflict with the positive relationship demonstrated by age. This study offers no empirically based explanations for this aberration. However, a possible explanation could be that mobility among government audit agencies encourages auditors with high tenure to seek other jobs. This, combined with the hiring of many retired military auditors, could explain

the contradiction between age and tenure. From the data analysis, however, it appears that, as tenure increases, the likelihood that an auditor will remain with the AFAA decreases. The result of this situation could be a relatively mature work force with low experience levels and little inclination to remain on the job.

### Recommendations

#### Model Validation

Future research should be undertaken to validate the synthesized model presented in this study. This could consist of a study of auditors who had voluntarily left the AFAA. A questionnaire similar to the one used in this study could be administered and results checked against the model to determine if the model accurately describes the principle reasons for job dissatisfaction and ultimately withdrawal from the organization. Such a study should serve to reinforce the conclusions of this research and provide AFAA management with confirmation of the key areas to be approached for improved job satisfaction among current employees.

### Tenure

The conclusion in this study that, as tenure increases, organizational commitment decreases, is counter to existing research. Further, because such a conclusion was unexpected, no steps were built into this study to determine the reasons for this anomaly. Therefore, research into this area should be performed. Such research should determine the cause of decreased organizational commitment with increased tenure and, if possible, provide linkage to the model developed in this study to determine overall impact on the model if tenure was to become a positive relationship with organizational commitment.

### Questionnaire

Reliability test of the questionnaire factor scales during the data analysis phase of this study indicated that some factor scales did not achieve acceptable internal consistency within the variables derived by factor analysis. These were: (1) Skill Task Variety, Questions 14, 19, and 30; (2) Opportunity, Questions 22 and 38; (3) Job Stability, Questions 75-76, 63-64, and 23; (4) Work Environment, Questions 20, 27, and 79-80; and (5) Adversary Position, Questions 33, 77-78, and 26. There can be many reasons for low reliability, some of which may not be controllable by researchers. For example, there is no way to control for



differences in experience and perceptions in the responses of people to the same question. However, if this questionnaire was to be used in the future, we would recommend that researchers review the areas previously mentioned and, if possible, eliminate any ambiguity that might exist in questions and, if necessary, add questions to more accurately measure variables that displayed low reliability.

#### Adversary Role Understanding

The questionnaire provided for the measurement of the perceived level of adversary role. As measured, the amount perceived to exist was fairly large (mean 5.076) while the perceived amount that there should be was very small (mean 2.451). Considering the position and relationship to USAF management of the AFAA civilian auditor, these perceptions have the potential to be dysfunctional in regard to job satisfaction and possibly productivity. It is, therefore, suggested that further study be conducted in regard to the adversary role of the AFAA auditor and USAF management. We do not suggest that the adversary position be eliminated nor strengthened. Rather, that it be studied to provide a greater understanding of its causes and impacts and that methods and procedures be developed to reduce its effects. Further educational efforts should be undertaken to

ensure that AFAA auditors have a realistic understanding of their environment so that conflict, while not totally avoidable, can be anticipated, understood and prepared for.

#### Capacity to Accept Change

The motivating potential score (MPS) computed in Appendix D provides an index of the capacity of an organization to respond favorably to job enrichment activities. The MPS of 108 for the Air Force Audit Agency suggests a slightly below average capacity to respond to changes in the job structure. Further, it suggests that changes should be approached cautiously, as opposed to dramatically, and that a strong informational campaign should accompany any changes in the job framework.

#### Potential Field Application

In fulfilling the objectives of this research effort, a model of the relationship between job satisfaction and other variables has been constructed. A potential use for this model would be to apply it at local Air Force Audit Agency offices as a means of identifying areas of low job satisfaction. Having the specific areas of dissatisfaction identified that are significant to job turnover would enable the Air Force Audit Agency managers to concentrate their job

enhancements efforts at the dissatisfying areas most likely  
to cause a voluntary withdrawal.

## APPENDICES

**APPENDIX A**

**MISSION AND ORGANIZATIONAL STRUCTURE  
OF THE AIR FORCE AUDIT AGENCY**

## MISSION AND ORGANIZATIONAL STRUCTURE OF THE AIR FORCE AUDIT AGENCY

### Mission

The mission of the Air Force Audit Agency (AFAA) is to provide an independent, objective, and constructive review and appraisal of the economy, effectiveness, and efficiency with which managerial responsibilities are carried out at all levels of Air Force management (Figure 8).

### The Auditor General

The Auditor General, the Deputy Auditor General, and the staff directorates are located at Norton AFB, CA. The Assistant Auditor General, located at Washington DC, is the Auditor General's representative at the Pentagon (Table 32).

Information contained in the personnel recapitulations is of 30 June 1980. The use of parentheses to mark off a personnel category represents staff auditor (operational) personnel assigned administrative duties. The AFAA is a composite of civilian/military positions (Table 37), the ratio of civilian to military is approximately 75/25 (Table 38), and the General Schedule (GS) grades range from GS-3 to GS-18 (Senior Executive Service [SES]), (Tables 39 - 41). Data on military personnel was compiled to present the organization's entire composition.

### Functional Directorates

There are two line directorates organized according to functions for which they have audit responsibility. Activities of the directorates are oriented toward areas which represent the bulk of the Air Force investment in dollars and other resources.

#### Directorate of Service-Wide Systems

Located at Andrews AFB MD, the Directorate of Service-Wide Systems is responsible for managing centrally directed, integrated, multi-site audits of Air Force-wide systems and programs. This directorate also supervises the AFSA offices located at the Air Force Accounting and Finance Center, Randolph AFB, TX; and the Data Systems Design Center, Gunter AFS, AL (Table 33).

#### Directorate of Acquisition and Logistics Systems

Headquartered at Wright-Patterson AFB OH, the Directorate of Acquisition and Logistics Systems is responsible for all integrated audits of the operations of the Air Force Systems Command and the Air Force Logistics Command. Audit subjects include management of weapon and support systems acquisition/operation; research; development; test facilities; and central procurement functions. Auditors assigned to this Directorate are in residence at the three System Command Buying Divisions (Aeronautical Systems

Division, Electronic Systems Division, and the Ballistic Missile Organization); the five Logistics Command Air Logistics Centers (Hill, Kelly, McClellan, Robins, and Tinker AFBs); and other selected installations (Andrews, Edwards, Elgin, Kirtland, and Wright-Patterson) (Table 34).

#### The Regions

The AFAA has 63 audit offices located on major Air Force installations. These resident offices are responsive to audit needs of the managers on the installations where they are located. They are organizationally independent and report directly to the Auditor General through geographical region headquarters. AFAA region headquarters are positioned to provide technical supervision, guidance, and support to resident audit offices within defined geographical areas.

#### Eastern Region

Eastern region headquarters is located at Langley AFB, VA. This region includes audit offices in Europe as well as the Eastern United States-- for a total of 31 resident audit offices (Table 35).

#### Western Region

Western region headquarters is located at Norton AFB, CA. This region encompasses audit offices at Air Force installations throughout the Pacific and Far East, as well as



the Western United States--for a total of 32 audit offices  
(Table 36).

Figure 8

AFAA ORGANIZATION CHART

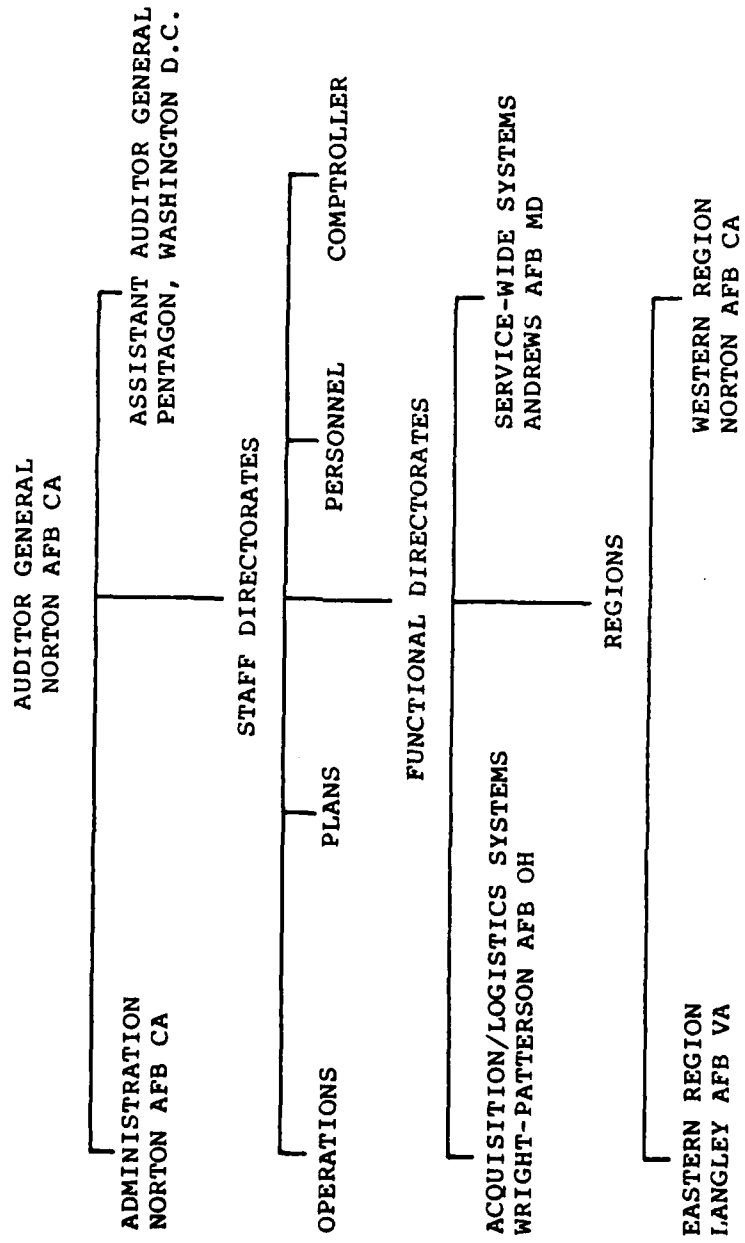


TABLE 32

AUDITOR GENERAL AND STAFF DIRECTORATES PERSONNEL BY POSITION

<u>POSITION</u>	<u>AUTH</u>	<u>ASSIGNED</u>
CIVILIAN		
SUPERVISORY	8	8
OPERATIONAL	0 (23)	0 (22)
ADMINISTRATIVE	<u>54</u>	<u>50</u>
TOTAL	<u>62</u>	<u>58</u>
MILITARY		
OFFICER		
SUPERVISORY	8	8
OPERATIONAL	0 (13)	0 (11)
ADMINISTRATIVE	<u>16</u>	<u>12</u>
ENLISTED		
SUPERVISORY	6	6
OPERATIONAL	9	0
ADMINISTRATIVE	<u>11</u>	<u>14</u>
TOTAL	<u>41</u>	<u>40</u>
GRAND TOTAL	<u>103</u>	<u>98</u>

TABLE 33

DIRECTORATE OF SERVICE-WIDE SYSTEMS PERSONNEL BY POSITION

<u>POSITION</u>	<u>AUTH</u>	<u>ASSIGNED</u>
CIVILIAN		
SUPERVISORY	8	8
OPERATIONAL	56 (56)	42 (3)
ADMINISTRATIVE	<u>18</u>	<u>14</u>
TOTAL	<u>82</u>	<u>64</u>
MILITARY		
OFFICER		
SUPERVISORY	8	8
OPERATIONAL	13 (1)	12 (1)
ADMINISTRATIVE	<u>1</u>	<u>1</u>
ENLISTED		
SUPERVISORY	0	0
OPERATIONAL	2	1
ADMINISTRATIVE	<u>3</u>	<u>2</u>
TOTAL	<u>27</u>	<u>24</u>
GRAND TOTAL	<u>109</u>	<u>88</u>

TABLE 34

DIRECTORATE OF ACQUISITIONS AND LOGISTICS SYSTEMS  
PERSONNEL BY POSITION

<u>POSITION</u>	<u>AUTH</u>	<u>ASSIGNED</u>
Civilian		
Supervisory	30	26
Operational	187	161 (8)
Administrative	<u>43</u>	<u>35</u>
TOTAL	<u>260</u>	<u>222</u>
Military		
Officer		
Supervisory	20	19
Operational	41 (5)	36 (3)
Administrative	<u>5</u>	<u>3</u>
Enlisted		
Supervisory	1	1
Operational	1	2
Administrative	<u>2</u>	<u>2</u>
TOTAL	<u>70</u>	<u>63</u>
GRAND TOTAL	<u>330</u>	<u>285</u>

TABLE 35

EASTERN REGION PERSONNEL BY POSITION

<u>POSITION</u>	<u>AUTH</u>	<u>ASSIGNED</u>
Civilian		
Supervisory	29	28
Operational	131 (5)	112 (4)
Administrative	<u>43</u>	<u>37</u>
TOTAL	<u>203</u>	<u>177</u>
Military		
Officer		
Supervisory	11	12
Operational	39	39 (5)
Administrative	4	5
Enlisted		
Supervisory	0	0
Operational	7	12
Administrative	<u>4</u>	<u>4</u>
TOTAL	<u>65</u>	<u>72</u>
GRAND TOTAL	<u>268</u>	<u>249</u>

TABLE 36

WESTERN REGION PERSONNEL BY POSITION

<u>POSITION</u>	<u>AUTH</u>	<u>ASSIGNED</u>
Civilian		
Supervisory	21	19
Operational	115 (6)	101 (6)
Administrative	<u>41</u>	<u>39</u>
Military		
Officer		
Supervisory	16	15
Operational	41 (3)	39 (4)
Administrative	3	4
Enlisted		
Supervisory	0	0
Operational	5	9
Administrative	<u>3</u>	<u>3</u>
TOTAL	<u>68</u>	<u>70</u>
GRAND TOTAL	<u>245</u>	<u>229</u>

TABLE 37

RECAPITULATION OF AFAA PERSONNEL BY POSITION

POSITION	<u>AUTH</u>	<u>ASSIGNED</u>
Civilian		
Supervisory	96	89
Operational	489 (50)	416 (43)
Administrative	<u>199</u>	<u>175</u>
TOTAL	784	680
Military		
Officer		
Supervisory	63	62
Operational	134 (26)	126 (24)
Administrative	<u>29</u>	<u>25</u>
TOTAL	226	213
Enlisted		
Supervisory	7	7
Operational	15	24
Administrative	<u>23</u>	<u>25</u>
TOTAL	<u>45</u>	<u>56</u>
	<u>271</u>	<u>269</u>
AGENCY TOTAL	<u>1,055</u>	<u>949</u>



TABLE 38

COMPARISON OF CIVILIAN/MILITARY POSITIONS AND FILL RATES

SUPERVISORY		<u>AUTH</u>	<u>ASSIGNED</u>
Civilian		96 60%	89 59%
Officer		<u>63 40%</u>	<u>62 41%</u>
TOTAL		159 100%	151 100%

## Fill Rate

Civilian	89/96 =	92.7%
Officer	62/63 =	98.5%
Average	151/159 =	95.0%

## OPERATIONAL

Civilian		489 79%	416 77%
Officer		<u>134 21%</u>	<u>126 23%</u>
TOTAL		623 100%	542 100%

## Fill Rate

Civilian	416/489 =	85.1%
Officer	126/134 =	94.1%
Average	542/623 =	87.0%

TABLE 38  
(CONTINUED)

ADMINISTRATIVE		<u>AUTH</u>		<u>ASSIGNED</u>	
	Civilian	50	66%	43	64%
	Officer	<u>26</u>	<u>34%</u>	<u>24</u>	<u>36%</u>
	TOTAL	76	100%	67	100%

Fill Rate

Civilian	43/50	=	86%
Officer	24/26	=	92%
Average	67/76	=	88%

TABLE 39  
RECAPITULATION OF CIVILIAN PERSONNEL BY GRADE BY DIRECTORATE/REGION

GRADE	AG AUTH/ASGN	SW AUTH/ASGN	QL AUTH/ASGN	EASTERN AUTH/ASGN	WESTERN AUTH/ASGN	AUTH/ASGN	TOTAL OVER/SHORT
SES	1 1		1 1			2 2	
15	1 1	1 1	5 5	3 3		10 10	
14	9 9	4 4	15 13	5 5	2 2	35 33	2
13	17 15	27 19	47 33	21 14	14 11	126 92	34
12	6 6	24 19	56 48	26 21	24 24	136 118	18
11	2 2	12 8	76 62	85 69	78 59	253 200	53
9	1 0	2 2	14 15	19 21	12 13	48 51	3
7	3 3	1 1	13 17	6 10	11 15	34 46	12
6	6 6	1 1	9 8	1 1	1 1	18 17	1
5	8 8	9 7	17 12	31 20	33 29	98 76	22
4	6 4	1 2	7 6	6 13	2 5	22 30	8
3	0 1		0 2			0 3	3
TOTAL	62 58	82 64	260 222	203 177	177 159	784 680	26 130

TABLE 40  
RECAPITULATION OF MILITARY OFFICER PERSONNEL BY RANK BY DIRECTORATE/REGION

GRADE	AG AUTH/ASGN	SW AUTH/ASGN	OL AUTH/ASGN	EASTERN AUTH/ASGN	WESTERN AUTH/ASGN	AUTH/ASGN	TOTAL OVER/SHORT
BG	1 0					1 0	1
COL	3 3	1 1	3 2	1 1	2 1	10 8	2
LTC	6 7	3 4	13 12	8 4	3 4	33 31	2
MAJ	9 8	9 7	19 15	7 11	9 9	53 50	3
CPT	5 2	9 9	31 24	31 20	44 26	120 81	39
1 LT			0 3	7 12	2 11	9 26	17
2 LT			0 2	0 8	0 7	0 17	17
TOTAL	24 20	22 21	66 58	54 56	60 58	226 213	37 44

TABLE 41  
RECAPITULATION OF MILITARY ENLISTED PERSONNEL BY RANK BY DIRECTORATE/REGION

GRADE	AG AUTH/ASGN	SW AUTH/ASGN	OL AUTH/ASGN	EASTERN AUTH/ASGN	WESTERN AUTH/ASGN	TOTAL AUTH/ASGN	OVER/SHORT
CMS	2 3	1 0	0 1	0 1	0 1	3 6	3
SMS	1 2	1 0	1 0	1 2	1 1	5 5	
MSG	3 6	0 1	1 1	3 4	4 6	11 18	7
TSG	7 4	2 1	0 2	4 5	1 2	14 14	
SSG	3 4	1 1	1 1	2 4	2 1	9 11	2
SGT	1 1	— —	1 0	1 0	0 1	3 2	1
TOTAL	17 20	5 3	4 5	11 16	8 12	45 56	12 1

**APPENDIX B**  
**JOB SATISFACTION SURVEY QUESTIONNAIRE**



DEPARTMENT OF THE AIR FORCE  
AIR FORCE INSTITUTE OF TECHNOLOGY (ATIC)  
WRIGHT-PATTERSON AIR FORCE BASE, OH 45433

23 April 1981

REPLY TO  
ATTN OF AFIT/LS (LSSR 5-81) Messrs. Hanby and Zimmerman AV 785-4437

SUBJECT Job Satisfaction Questionnaire

to AFAA Civilian Auditors

1. The attached questionnaire was prepared by a research team at the Air Force Institute of Technology, Wright-Patterson AFB, Ohio. The purpose of the questionnaire is to acquire data in order to evaluate the relationship between the turnover of civilian auditors employed by the Air Force Audit Agency and the elements of perceived job satisfaction.
2. You are requested to provide a response for each question. Headquarters USAF survey control number 81-47 has been assigned to this questionnaire. Your participation in this research is voluntary.
3. In accordance with Public Law expounded in the Privacy Act (see attachment) and the Auditor General's letter on confidentiality of responses (see attachment) your responses to the questions will be held strictly confidential. Your cooperation in providing this data will be appreciated and will be very beneficial in determining the causal factors of civilian auditor turnover within the Air Force Audit Agency.
4. Your responses should reflect your opinions, attitudes, and perceptions.
5. Please seal the completed questionnaire in the accompanying envelope and return mail it within 1 week after receipt.

*Bruce K. Zimmerman*

BRUCE K. ZIMMERMAN  
AFIT Graduate Student

- 3 Atch  
1. Privacy Statement  
2. Ltr, 4 Feb 81  
3. Questionnaire

### PRIVACY STATEMENT

In accordance with paragraph 30, AFR 12-35, the following information is provided as required by the Privacy Act of 1974:

a. Authority:

- (1) 5 U.S.C. 301, Departmental Regulations, and/or
- (2) 10 U.S.C. 8012, Secretary of the Air Force, Powers, Duties, Delegation by Compensation; and/or
- (3) EO 9397, 22 Nov 43, Numbering System for Federal Accounts Relating to Individual Persons; and/or
- (4) DOD Instruction 1100.13, 17 Apr 68, Surveys of Department of Defense Personnel; and/or
- (5) AFR 30-23, 22 Sep 76, Air Force Personnel Survey Program.

b. Principal purpose. The survey is being conducted to collect information to be used in research aimed at illuminating and providing inputs to the solution of problems of interest to the Air Force and/or DOD.

c. Routine uses. The survey data will be converted to information for use in research of management related problems. Results of the research, based on the data provided, will be included in written master's theses and may also be included in published articles, reports, or texts. Distribution of the results of the research, based on the survey data, whether in written form or presented orally, will be unlimited.

d. Participation in this survey is entirely voluntary.

e. No adverse action of any kind may be taken against any individual who elects not to participate in any or all of this survey.





DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS AIR FORCE AUDIT AGENCY  
NORTON AIR FORCE BASE, CA 92409

REPLY TO  
ATTN OF: AG

4 February 1981

SUBJECT: Attitude and Opinion Survey

TO: Directorates, Regions and Area Audit Offices

1. Messrs G. E. Hanby and B. K. Zimmerman are currently conducting research for an Air Force Institute of Technology Master's Thesis on the subject of job satisfaction of AFAA civilian auditors. A survey instrument (questionnaire) was developed to collect data on attitudes, opinions, and perceptions of the civilian audit staff. This data will be aggregated by the researchers for use in evaluating the relationship between job satisfaction and turnover. This survey is not an evaluation of AFAA management or audit staff personnel. Individual responses will not be used to develop research conclusions and, under no circumstances, will disaggregate data be released by the researchers. Identities of respondents are not desired and no attempt will be made to reconstruct identity from completed questionnaires.

2. Although validity of the research will be greatly enhanced if the questionnaire is answered completely, participation in the survey is completely voluntary.

J. H. STOLAROW  
The Auditor General

### INSTRUCTIONS FOR ANSWERING QUESTIONNAIRE

The attached answer sheet should be used to complete the questionnaire. Please use a No. 2 pencil to mark your responses. Make heavy black marks that fill the appropriate blocks on the answer sheet.

With the exception of background questions, a seven point scale is used. For example, using the scale below, if you moderately agree with statement 1 then you would blacken the box under number 6 on the answer sheet as shown in the example below.

SCALE:      1. *Strongly disagree*                      5. *Slightly agree*  
              2. *Moderately disagree*                6. *Moderately agree*  
              3. *Slightly disagree*                    7. *Strongly agree*  
              4. *Neither agree or disagree*

#### ITEM STATEMENT:

1. The information your work group receives from other work groups is helpful.

#### ANSWER RESPONSE:

1   2   3   4   5   6   7  
[ ] [ ] [ ] [ ] [ ] [■] [ ]

It is important that you answer the questionnaire as accurately and completely as possible.

PLEASE: Do NOT fold or staple the answer sheet.

Return the entire questionnaire package along with the answer sheet.

Do NOT fill in the name or identification sections on the answer sheet.

Seal the completed answer sheet and other questionnaire materials in the accompanying envelope and mail within 1 week after receipt.

RESPONSES CONTAINED ON THE ANSWER SHEET WILL BE CONFIDENTIAL.  
PLEASE DO NOT PROVIDE YOUR NAME, SOCIAL SECURITY ACCOUNT NUMBER,  
OR ANY OTHER IDENTIFYING INFORMATION.

JOB SATISFACTION QUESTIONNAIRE

1. What is your age, in years:
  1. 20 - 24.
  2. 25 - 29.
  3. 30 - 34.
  4. 35 - 39.
  5. 40 - 49.
  6. 50 - 59.
  7. 60 or over.
2. Total months in the Air Force Audit Agency is:
  1. Less than 1 month.
  2. More than 1 month, less than 6 months.
  3. More than 6 months, less than 12 months.
  4. More than 12 months, less than 18 months.
  5. More than 18 months, less than 24 months.
  6. More than 24 months, less than 36 months.
  7. More than 36 months.
3. Total months experience in your present job is:
  1. Less than 1 month.
  2. More than 1 month, less than 6 months.
  3. More than 6 months, less than 12 months.
  4. More than 12 months, less than 18 months.
  5. More than 18 months, less than 24 months.
  6. More than 24 months, less than 36 months.
  7. More than 36 months.
4. Your highest education level:
  1. High School.
  2. Some College.
  3. Associate degree.
  4. Bachelors degree.
  5. Some graduate work.
  6. Masters degree.
  7. Graduate work or degree above Masters degree.
5. Your sex is:
  1. Male.
  2. Female.

6. Your ethnic origin is:

1. American Indian or Alaskan Native.
2. Asian or Pacific Islander.
3. Black, not of Hispanic Origin.
4. Hispanic.
5. White, not of Hispanic Origin.
6. Other.

7. How many people do you directly supervise (those you write performance evaluations for)?

1. None.
2. 1 to 2.
3. 3 to 5.
4. 6 to 8.
5. 9 to 12.
6. 13 to 20.
7. 21 or more.

8. What is your functional job title? (If "Other" leave blank.)

1. Auditor.
2. Staff Auditor.
3. Office Chief.
4. Branch Chief.
5. Division Chief.
6. Supervisory Auditor.
7. Audit Manager.

9. What is your General Schedule (GS) grade?

1. 5.
2. 7.
3. 9.
4. 11.
5. 12.
6. 13.
7. 14 or over.

10. What is your General Schedule (GS) step?

1. 1.
2. 2.
3. 3.
4. 4.
5. 5 or 6.
6. 7 or 8.
7. 9 or 10.

11. Does your spouse work for remuneration outside the home?
  1. Yes.
  2. No.
  3. Not married.

#### INSTRUCTIONS

*Below are items which relate to your job. Read each statement carefully and then decide to what extent the statement is true of your job. Indicate the extent that the statement is true for your job by choosing the statement below which best represents your job.*

- |                             |                              |
|-----------------------------|------------------------------|
| 1. Not at all.              | 5. To a fairly large extent. |
| 2. To a very little extent. | 6. To a great extent.        |
| 3. To a little extent.      | 7. To a very great extent.   |
| 4. To a moderate extent.    |                              |
- 
12. To what extent are you aware of promotion/advancement opportunities that affect you?
  13. To what extent are your job performance goals clear and specific?
  14. To what extent does your job provide a great deal of freedom and independence in scheduling your work and selecting your own procedures to accomplish it?
  15. To what extent do you desire to perform the same (functional area) audits repeatedly?
  16. To what extent are you willing to exert considerable effort on the part of the Air Force Audit Agency?
  17. To what extent do you intend to remain with the Air Force Audit Agency?
  18. To what extent are the goals and values of the Air Force Audit Agency compatible with your own goals and values?
  19. To what extent does your job require you to do many different things, using a variety of your talents and skills?
  20. To what extent is the work space provided adequate?
  21. To what extent does your job satisfy your vocational desires?
  22. The extent of the demand for your skills in the job market?

- |                             |                              |
|-----------------------------|------------------------------|
| 1. Not at all.              | 5. To a fairly large extent. |
| 2. To a very little extent. | 6. To a great extent.        |
| 3. To a little extent.      | 7. To a very great extent.   |
| 4. To a moderate extent.    |                              |
- 
23. Prior to employment with the Air Force Audit Agency, the extent to which you understood what would be required of you in the performance of your job.
  24. Your chance for promotion compared to your peer-group in the Air Force Audit Agency.
  25. The chance to be promoted on the basis of ability.
  26. The extent to which your effort is greater than the effort of your coworkers.
  27. The extent to which you can vary your work schedule when required to conduct personal business.
  28. The ability of your supervisor to make decisions.
  29. If you performed the same type audit (or an audit of a functional area) frequently would you be more satisfied with your job?
  30. To what extent does your job involve doing a whole task or unit of work?
  31. To what extent is your job significant, in that it affects others in some important way?

#### INSTRUCTIONS

The statements below deal with the characteristics of your job. For some jobs certain statements may not be applicable. Should this be the case then you should not select any of the responses and leave the answer sheet blank for that question. Indicate your agreement with the statement by selecting the answer which best represents your attitude concerning your job.

- |                               |                      |
|-------------------------------|----------------------|
| 1. Strongly disagree.         | 5. Slightly agree.   |
| 2. Moderately disagree.       | 6. Moderately agree. |
| 3. Slightly disagree.         | 7. Strongly agree.   |
| 4. Neither agree or disagree. |                      |
- 
32. There is a high spirit of teamwork that exists between coworkers in my work group.

- |                                      |                             |
|--------------------------------------|-----------------------------|
| 1. <i>Strongly disagree.</i>         | 5. <i>Slightly agree.</i>   |
| 2. <i>Moderately disagree.</i>       | 6. <i>Moderately agree.</i> |
| 3. <i>Slightly disagree.</i>         | 7. <i>Strongly agree.</i>   |
| 4. <i>Neither agree or disagree.</i> |                             |
- 
33. The final product of my effort closely resembles the published report.
  34. My supervisor sets high performance standards.
  35. My supervisor is an effective manager.
  36. My supervisor encourages ideas for improving procedures.
  37. I would rather be performing some other type of work.
  38. The amount of pay I receive is more than I would expect to receive outside the Air Force Audit Agency.
  39. The quantity of output of your work group is very high.
  40. The quality of output of your work group is very high.
  41. Your organization has a very strong interest in the welfare of its people.
  42. I am very proud to work for this organization.
  43. My supervisor represents the group at all times.
  44. My supervisor establishes good work procedures.
  45. My supervisor has made his responsibilities clear to the group.
  46. My supervisor's directions must be followed exactly.
  47. My supervisor performs well under pressure.
  48. My supervisor usually makes decisions without group discussion.
  49. My supervisor overemphasizes the need to accomplish more than other groups.
  50. My supervisor overcontrols my work.
  51. My supervisor always helps me improve my performance.
  52. My supervisor frequently gives me feedback on how well I am doing my job.

# INSTRUCTIONS

On the following pages are listed several characteristics or qualities connected with your position. For each characteristic you will be asked to provide two ratings:

- a. How much of the characteristic is there now connected with your position?
- b. How much of the characteristic do you think should be connected with your position?

Indicate the amount by choosing the statement below which best represents your opinion.

- |                         |                           |
|-------------------------|---------------------------|
| 1. None.                | 5. A fairly large amount. |
| 2. A very small amount. | 6. A great amount.        |
| 3. A small amount       | 7. A very great amount.   |
| 4. A moderate amount.   |                           |

The feeling of self-esteem a person gets from being in my position:

53. How much is there now?
54. How much should there be?

The authority connected with my position:

55. How much is there now?
56. How much should there be?

The opportunity for personal growth and development in my position:

57. How much is there now?
58. How much should there be?

The prestige of my position within the Air Force Audit Agency (that is, the regard received from others in the agency):

59. How much is there now?
60. How much should there be?

The opportunity for independent thought and action in my position:

61. How much is there now?
62. How much should there be?



- |                         |                           |
|-------------------------|---------------------------|
| 1. None.                | 5. A fairly large amount. |
| 2. A very small amount. | 6. A great amount.        |
| 3. A small amount.      | 7. A very great amount.   |
| 4. A moderate amount.   |                           |

The feeling of security in my position:

63. How much is there now?

64. How much should there be?

The feeling of self-fulfillment a person gets from being in my position (that is, the feeling of being able to use one's own unique capabilities, realizing one's potentialities):

65. How much is there now?

66. How much should there be?

The prestige of my position outside the Air Force Audit Agency (that is, the regard received from others not in the agency):

67. How much is there now?

68. How much should there be?

The feeling of worthwhile accomplishment in my position:

69. How much is there now?

70. How much should there be?

The opportunity, in my position, to give assistance to other people:

71. How much is there now?

72. How much should there be?

The opportunity, in my position, for participating in the setting of goals:

73. How much is there now?

74. How much should there be?

The opportunity to develop close friendships in my position:

75. How much is there now?

76. How much should there be?

- |                         |                           |
|-------------------------|---------------------------|
| 1. None.                | 5. A fairly large amount. |
| 2. A very small amount. | 6. A great amount.        |
| 3. A small amount.      | 7. A very great amount.   |
| 4. A moderate amount.   |                           |

The feeling that there is an adversary position between the auditor and Air Force management:

77. How much is there now?

78. How much should there be?

The availability of tools and materials to support the audit effort:

79. How much is there now?

80. How much should there be?

END OF QUESTIONNAIRE

Please seal the completed answer sheet along with all other questionnaire materials in the accompanying envelope and mail within 1 week after receipt.

Thank-you for your assistance.

**APPENDIX C**  
**ANALYTICAL ANALYSIS DATA**

This appendix provides for the collection of data used in the analytical analysis section of Chapter IV. Tables 42 through 52 provide for individual comparisons between civilian auditors and the reference job frameworks. Tables 53 through 57 provide the frequency of response by need category. Tables 58 through 82 provide cross tabulations of response scores by the demographics, age, sex, ethnic origin, general schedule grade, and functional job title.

TABLE 42

NEED SATISFACTION SCORES OF AFAA CIVILIAN AUDITORS  
COMPARED TO INTERNAL AUDITORS

<u>Need Category</u>	<u>SCORES</u>		
	<u>(1) Internal Auditors</u>	<u>(2) AFAA Civilian Auditors</u>	<u>(3) Difference [(1)-(2)]</u>
Self-Actualization	1.294	1.741	(0.447)
Autonomy	1.149	1.394	(0.245)
Esteem	1.142	1.644	(0.502)
Social	0.640	1.159	(0.519)
Security	0.495	1.053	(0.558)
Average Score	0.944	1.398	(0.454)

The larger the need satisfaction score the lower the degree of perceived satisfaction.

TABLE 43

NEED SATISFACTION SCORES OF AFAA CIVILIAN AUDITORS  
COMPARED TO MID-LEVEL ACCOUNTANTS - I

Need Category	SCORES		
	(1) *Big Eight	(2) AFAA Civilian Auditors	(3) Difference [(1)-(2)]
Self-Actualization	0.923	1.741	(0.818)
Autonomy	0.734	1.394	(0.660)
Esteem	0.452	1.644	(1.192)
Social	0.370	1.159	(0.789)
Security	0.286	1.053	(0.767)
Average Score	0.553 =====	1.398 =====	(0.845) =====

The larger the need satisfaction score the lower the degree of perceived satisfaction.

\* Certified Public Accountants employed in mid-level accounting positions by accounting firms of the big eight multinationals.

TABLE 44

NEED SATISFACTION SCORES OF AFAA CIVILIAN AUDITORS  
COMPARED TO MID-LEVEL ACCOUNTANTS - II

Need Category	SCORES		
	(1) *Non-Big Eight	(2) AFAA Civilian Auditors	(3) Difference [(1)-(2)]
Self-Actualization	1.033	1.741	(0.708)
Autonomy	0.886	1.394	(0.508)
Esteem	0.722	1.644	(0.922)
Social	0.458	1.159	(0.701)
Security	0.500	1.053	(0.553)
Average Score	0.720	1.398	(0.678)
	=====	=====	=====

The larger the need satisfaction score the lower the degree of perceived satisfaction.

\* Certified Public Accountants employed in mid-level accounting positions by accounting firms other than the big eight.

TABLE 45

NEED SATISFACTION SCORES OF AFAA CIVILIAN AUDITORS  
COMPARED TO MID-LEVEL MANAGERS

Need Category	SCORES		
	(1) Mid-Level Managers	(2) AFAA Civilian Auditors	(3) Difference [(1)-(2)]
Self-Actualization	1.010	1.741	(0.731)
Autonomy	0.840	1.394	(0.554)
Esteem	0.540	1.644	(1.104)
Social	0.320	1.159	(0.839)
Security	0.280	1.053	(0.773)
Average Score	0.598	1.398	(0.800)
	-----	-----	-----

The larger the need satisfaction score the lower the degree of perceived satisfaction.



TABLE 46

NEED SATISFACTION SCORES OF AFAA CIVILIAN AUDITORS  
COMPARED TO PARTNER IN CHARTERED ACCOUNTANT  
FIRM OR SOLE PRACTITIONER

Need Category	SCORES		
	(1) CA Partner	(2) AFAA Civilian Auditor	(3) Difference [(1)-(2)]
Self-Actualization	0.649	1.741	(1.092)
Autonomy	0.240	1.394	(1.154)
Esteem	0.390	1.644	(1.254)
Social	0.275	1.053	(0.646)
Average Score	0.392	1.398	(1.006)
	-----	-----	-----

The larger the need satisfaction score the lower the degree of perceived satisfaction.

TABLE 47

NEED SATISFACTION SCORES OF AFAA CIVILIAN AUDITORS  
COMPARED TO EMPLOYEES IN CHARTERED  
ACCOUNTANT FIRMS

<u>Need Category</u>	<u>SCORES</u>		
	(1) <u>CA Firm</u> <u>Employee</u>	(2) <u>AFAA</u> <u>Civilian Auditor</u>	(3) <u>Difference</u> <u>[(1)-(2)]</u>
Self-Actualization	1.239	1.741	(0.502)
Autonomy	0.833	1.394	(0.561)
Esteem	0.742	1.644	(0.902)
Social	0.535	1.159	(0.642)
Security	0.597	1.053	(0.456)
Average Score	0.789	1.398	(0.609)
	-----	-----	-----

The larger the need satisfaction score the lower the degree of perceived satisfaction.

TABLE 48

NEED SATISFACTION SCORES OF AFAA CIVILIAN AUDITORS  
COMPARED TO CHARTERED ACCOUNTANTS EMPLOYED BY  
GOVERNMENT OR OTHER PUBLIC INSTITUTIONS

<u>Need Category</u>	<u>SCORES</u>		
	(1) CAs in Government	(2) AFAA Civilian Auditor	(3) Difference [(1)-(2)]
Self-Actualization	1.157	1.741	(0.584)
Autonomy	0.850	1.394	(0.544)
Esteem	0.808	1.644	(0.836)
Social	0.476	1.159	(0.683)
Security	* (0.021)	1.053	(1.074)
Average Score	0.654	1.398	(0.744)
	*****	*****	*****

The larger the need satisfaction score the lower the degree of perceived satisfaction.

\* Represents a slightly negative average score.

TABLE 49

NEED SATISFACTION SCORES OF AFAA CIVILIAN AUDITORS  
COMPARED TO CHARTERED ACCOUNTANTS EMPLOYED  
IN MANUFACTURING

Need Category	SCORES		
	(1) CAs in Industry	(2) AFAA Civilian Auditor	(3) Difference [(1)-(2)]
Self-Actualization	1.030	1.741	(0.711)
Autonomy	0.697	1.394	(0.697)
Esteem	0.645	1.644	(0.999)
Social	0.247	1.159	(0.912)
Security	0.553	1.053	(0.500)
Average Score	0.634	1.398	(0.764)
	=====	=====	=====

The larger the need satisfaction score the lower the degree of perceived satisfaction.

TABLE 50

NEED SATISFACTION SCORES OF AFAA CIVILIAN AUDITORS  
COMPARED TO CHARTERED ACCOUNTANTS EMPLOYED  
IN FINANCIAL INSTITUTIONS

Need Category	SCORES		
	(1) CAs in Finance	(2) AFAA Civilian Auditor	(3) Difference [(1)-(2)]
Self-Actualization	0.787	1.741	(0.954)
Autonomy	0.766	1.394	(0.628)
Esteem	0.652	1.644	(0.992)
Social	0.384	1.159	(0.775)
Security	0.362	1.053	(0.691)
Average Score	0.590	1.398	(0.808)
	=====	=====	=====

The larger the need satisfaction score the lower the degree of perceived satisfaction.

TABLE 51

NEED SATISFACTION SCORES OF AFAA CIVILIAN AUDITORS  
COMPARED TO CHARTERED ACCOUNTANTS EMPLOYED  
IN RETAIL INSTITUTIONS

Need Category	SCORES		
	(1) CAs in Retailing	(2) AFAA Civilian Auditor	(3) Difference [(1)-(2)]
Self-Actualization	0.996	1.741	(0.745)
Autonomy	0.676	1.394	(0.718)
Esteem	0.572	1.644	(1.072)
Social	0.455	1.159	(0.704)
Security	0.491	1.053	(0.562)
Average Score	0.638	1.398	(0.760)
	=====	=====	=====

The larger the need satisfaction score the lower the degree of perceived satisfaction.

TABLE 52

NEED SATISFACTION SCORES OF AFAA CIVILIAN AUDITORS  
COMPARED TO CHARTERED ACCOUNTANTS EMPLOYED  
BY OTHER INSTITUTIONS

Need Category	SCORES		
	(1) CAs in Other	(2) AFAA Civilian Auditor	(3) Difference [(1)-(2)]
Self-Actualization	0.700	1.741	(1.041)
Autonomy	0.338	1.394	(1.056)
Esteem	0.459	1.644	(1.185)
Social	0.267	1.159	(0.892)
Security	0.824	1.053	(0.229)
Average Score	0.518	1.398	(0.881)
	=====	=====	=====

The larger the need satisfaction score the lower the degree of perceived satisfaction.

TABLE 53

FREQUENCY OF SECURITY NEED SATISFACTION SCORES

<u>SCORE</u>	<u>ABSOLUTE FREQUENCY</u>	<u>RELATIVE FREQUENCY (%)</u>	<u>CUMULATIVE FREQUENCY (%)</u>
-6	1	.2	.2
-4	1	.2	.5
-3	3	.7	1.2
-2	10	2.3	3.5
-1	5	1.2	4.6
0	204	47.2	51.9
1	67	15.5	67.4
2	59	13.7	81.0
3	43	10.0	91.0
4	19	4.4	95.4
5	11	2.5	97.9
6	9	2.1	100.0
TOTAL	432	100.0	
	=====	=====	

Score equates to the arithmetically calculated need deficiency score. The greater the numeric value, the less the perceived need satisfaction.



TABLE 54

FREQUENCY OF SOCIAL NEED SATISFACTION SCORES

<u>SCORE</u>	<u>ABSOLUTE FREQUENCY</u>	<u>RELATIVE FREQUENCY (%)</u>	<u>CUMULATIVE FREQUENCY (%)</u>
-5	1	.2	.2
-2	2	.5	.7
-1	6	1.4	2.1
0	119	27.5	29.6
1	147	34.0	63.7
2	109	25.2	88.9
3	40	9.3	98.1
4	5	1.2	99.3
5	3	.7	100.0
	<hr/>	<hr/>	
TOTAL	432	100.0	
	-----	-----	

Score equates to the arithmetically calculated need deficiency score. The greater the numeric value, the less the perceived need satisfaction.

TABLE 55

FREQUENCY OF ESTEEM NEED SATISFACTION SCORES

<u>SCORE</u>	<u>ABSOLUTE FREQUENCY</u>	<u>RELATIVE FREQUENCY (%)</u>	<u>CUMULATIVE FREQUENCY (%)</u>
-2	1	.2	.2
-1	1	.2	.5
0	79	18.3	18.8
1	132	30.6	49.3
2	117	27.1	76.4
3	68	15.7	92.1
4	27	6.3	98.4
5	7	1.6	100.0
	<hr/>	<hr/>	
TOTAL	432	100.0	
	=====	=====	

Score equates to the arithmetically calculated need deficiency score. The greater the numeric value, the less the perceived need satisfaction.

TABLE 56

FREQUENCY OF AUTONOMY NEED SATISFACTION SCORES

<u>SCORE</u>	<u>ABSOLUTE FREQUENCY</u>	<u>RELATIVE FREQUENCY (%)</u>	<u>CUMULATIVE FREQUENCY (%)</u>
-1	4	.9	.9
0	104	24.1	25.0
1	148	34.3	59.3
2	97	22.5	81.7
3	55	12.7	94.4
4	21	4.9	99.3
5	3	.7	100.0
	<hr/>	<hr/>	
TOTAL	432	100.0	
	=====	=====	

Score equates to the arithmetically calculated need deficiency score. The greater the numeric value, the less the perceived need satisfaction.

TABLE 57

FREQUENCY OF SELF-ACTUALIZATION NEED SATISFACTION SCORES

<u>SCORE</u>	<u>ABSOLUTE FREQUENCY</u>	<u>RELATIVE FREQUENCY (%)</u>	<u>CUMULATIVE FREQUENCY (%)</u>
-1	1	.2	.2
0	79	18.3	18.5
1	127	29.4	47.9
2	113	26.2	74.1
3	66	15.3	89.4
4	29	6.7	96.1
5	16	3.7	99.8
6	1	.2	100.0
	<hr/>	<hr/>	
TOTAL	432	100.0	
	*****	*****	

Score equates to the arithmetically calculated need deficiency score. The greater the numeric value, the less the perceived need satisfaction.

TABLE 58

## CROSS TABULATION OF SECURITY NEED RESPONSES BY RESPONDENT'S AGE

AGE	NEED DEFICIENCY SCORE RESPONSES - SECURITY													ROW TOTAL (%)
	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	
20-24							3	4	2					9 (2.1)
25-29					1		22	5	9	5	1	1		44 (10.2)
30-34				2	4	3	48	12	16	10	5	2	1	103 (23.9)
35-39	1		1	1	4		53	14	14	11	4	4	4	111 (25.8)
40-49					1	1	47	17	11	11	6	2	2	98 (22.7)
50-59						1	26	14	6	5	3	2	2	59 (13.7)
60 and over							4	1	1	1				7 (1.6)
COLUMN TOTAL (%)	1 (0.2)	0 (0.2)	1 (0.2)	3 (0.7)	10 (2.3)	5 (1.2)	203 (47.1)	67 (15.5)	59 (13.7)	43 (10.0)	19 (4.4)	11 (2.6)	9 (2.1)	431 (100.0)

TABLE 59

## CROSS TABULATION OF SECURITY NEED RESPONSES BY RESPONDENT'S SEX

NEED DEFICIENCY SCORE RESPONSES - SECURITY															ROW TOTAL (%)
		-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	
MALE	1			1	3	10	5	178	61	50	39	17	11	8	384 (88.9)
FEMALE								26	6	9	4	2		1	48 (11.1)
COLUMN TOTAL (%)	1	0	1	3	10	5	204	67	59	43	19	11	9		432 (100.0)

TABLE 60

## CROSS TABULATION OF SECURITY NEED RESPONSES BY RESPONDENT'S ETHNIC ORIGIN

NEED DEFICIENCY SCORE RESPONSES - SECURITY														ROW TOTAL (%)
	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	
ETHNIC ORIGIN														
Indian							1	1	1			1		4 (0.9)
Asian					1		5	3	3					12 (2.8)
Black						1	2	1	1	2	1	1		9 (2.1)
Hispanic				1			4	2	1	3		1		12 (2.8)
White	1		2	2	9	4	185	57	53	35	16	8	8	378 (87.5)
Other			1				7	3		3	2		1	17 (3.9)
COLUMN TOTAL (%)	1 (0.2)	0	1 (0.2)	3 (0.7)	10 (2.3)	5 (1.2)	204 (47.2)	67 (15.5)	59 (13.7)	43 (10.0)	19 (4.4)	11 (2.5)	9 (2.1)	432 (100.0)

TABLE 61  
CROSS TABULATION OF SECURITY NEED RESPONSES BY RESPONDENT'S GS GRADE

GS GRADE	NEED DEFICIENCY SCORE RESPONSES - SECURITY											Row total (%)		
	-6	-5	-4	-3	-2	-1	0	1	2	3	4		5	6
5									1				1 (0.2)	
7							19	5	3	7	2		36 (8.3)	
9							16	7	5	5		1	34 (7.9)	
11	1			3	7	3	72	20	21	7	5	3	142 (32.9)	
12					3	1	41	16	19	8	6	1	99 (22.9)	
13						1	40	10	8	10	4	5	82 (19.0)	
14 or over							16	9	2	6	2	1	38 (8.8)	
Column Total (%)	1 (0.2)	0 (0.2)	1 (0.2)	3 (0.7)	10 (2.3)	5 (1.2)	204 (47.2)	67 (15.5)	59 (13.7)	43 (10.0)	19 (4.4)	11 (2.5)	9 (2.1)	432 (100.0)



TABLE 62  
CROSS TABULATION OF SECURITY NEED RESPONSES BY RESPONDENT'S FUNCTIONAL JOB TITLE

JOB TITLE	NEED DEFICIENCY SCORE RESPONSES - SECURITY													ROW TOTAL (%)
	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	
Other							2	1		1				4 (0.9)
Auditor	1			3	8	3	121	32	29	19	7	4		227 (52.5)
Staff Auditor					1	1	17	11	6	3	2	1	1	43 (10.0)
Office Chief					1	1	15	8	6	3	1	1		36 (8.3)
Branch Chief							11	6	2	2	3	1	2	27 (6.3)
Division Chief							4	2		2				8 (1.9)
Supervisory Auditor							4	2	2					8 (1.9)
Audit Manager			1				30	5	14	13	6	4	6	79 (18.3)
COLUMN TOTAL (%)	1 (0.2)	0 (0.2)	1 (0.2)	3 (0.7)	10 (2.3)	5 (1.2)	204 (47.2)	67 (15.5)	59 (13.7)	43 (10.0)	19 (4.4)	11 (2.5)	9 (2.1)	432 (100.0)

TABLE 63  
CROSS TABULATION OF SOCIAL NEED RESPONSES BY RESPONDENT'S AGE

AGE	NEED DEFICIENCY SCORE RESPONSES - SOCIAL													ROW TOTAL (%)
	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	
20-24							1	3	3	1	1			9 (2.1)
25-29							12	16	12	4				44 (10.2)
30-34						2	30	32	27	8	3	1		103 (23.9)
35-39		1			1	1	24	41	29	13		1		111 (25.8)
40-49					1	2	27	32	24	10	1	1		98 (22.7)
50-59						1	22	21	11	4				59 (13.7)
60 and over							2	2	3					7 (1.6)
COLUMN TOTAL (%)	0	1 (0.2)	0	0	2 (0.5)	6 (1.4)	118 (27.4)	147 (34.1)	109 (25.3)	40 (9.3)	5 (1.2)	3 (0.7)	0	431 (100.0)

TABLE 64  
CROSS TABULATION OF SOCIAL NEED RESPONSES BY RESPONDENT'S SEX

SEX	NEED DEFICIENCY SCORE RESPONSES - SOCIAL													ROW TOTAL (%)
	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	
Male		1			2	6	110	132	90	36	4	3		384 (88.9)
Female							9	15	19	4	1			48 (11.1)
COLUMN TOTAL (%)	0 (0.2)	1 (0.2)	0	0	2 (0.5)	6 (1.4)	119 (27.5)	147 (34.0)	109 (25.2)	40 (9.3)	5 (1.2)	3 (0.7)	0	432 (100.0)

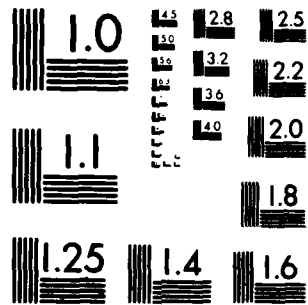
TABLE 65  
CROSS TABULATION OF SOCIAL NEED RESPONSES BY RESPONDENT'S ETHNIC ORIGIN

ETHNIC ORIGIN	NEED DEFICIENCY SCORE RESPONSES - SOCIAL											ROW TOTAL (%)	
	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6
Indian								2	2				4 (0.9)
Asian						4	5	2	1				12 (2.8)
Black						3		6					9 (2.1)
Hispanic						4	1	4	2	1			12 (2.8)
White	1				2	6	100	137	92	35	3	2	378 (87.5)
Other						8	2	3	2	1	1		17 (3.9)
COLUMN TOTAL (%)	0 (0.2)	1 (0.2)	0	0	2 (0.5)	6 (1.4)	119 (27.5)	147 (34.0)	109 (25.2)	40 (9.3)	5 (1.2)	3 (0.7)	432 (100.0)

AD-A108 407 AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OH SCHOOL--ETC F/G 5/9  
JOB SATISFACTION AND CIVILIAN AUDITOR TURNOVER WITHIN THE AIR F--ETC(U)  
JUN 81 G E HANBY, B K ZIMMERMAN  
UNCLASSIFIED AFIT-LSSR-5-81 NL

3 of 3  
Source

END  
DATE  
FILMED  
1 MAR  
DTIC



MICROCOPY RESOLUTION TEST CHART  
NATIONAL BUREAU OF STANDARDS 1963 A,

TABLE 66  
CROSS TABULATION OF SOCIAL NEED RESPONSES BY RESPONDENT'S GS GRADE

GS GRADE	NEED DEFICIENCY SCORE RESPONSES - SOCIAL													ROW TOTAL (%)
	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	
5								1						1 (0.2)
7					1		14	6	12	2	1			36 (8.3)
9							6	14	10	4				34 (7.9)
11		1				3	26	51	41	17	2	1		142 (32.9)
12						2	28	35	24	8	2			99 (22.9)
13					1		24	29	19	7		2		82 (19.0)
14 or over						1	21	11	3	2				38 (8.8)
COLUMN TOTAL (%)	0 (0.2)	1 (0.2)	0	0	2 (0.5)	6 (1.4)	119 (27.5)	147 (34.0)	109 (25.2)	40 (9.3)	5 (1.2)	3 (0.7)	0	432 (100.0)

TABLE 67  
CROSS TABULATION OF SOCIAL NEED RESPONSES BY RESPONDENT'S FUNCTIONAL JOB TITLE

JOB TITLE	NEED DEFICIENCY SCORE RESPONSES - SOCIAL													ROW TOTAL (%)
	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	
Other							2	1	1					4 (0.9)
Auditor	1				1	4	52	75	63	25	4	1		227 (52.5)
Staff Auditor							9	17	12	5				43 (10.0)
Office Chief					1	14	15	5	1					36 (8.3)
Branch Chief					1	14	10	1	1					27 (6.3)
Division Chief							5	2		1				8 (1.9)
Supervisory Auditor							4	1	3					8 (1.9)
Audit Manager					1		19	25	24	7	1	2		79 (18.3)
COLUMN TOTAL (%)	0 (0.2)	1	0	0	2 (0.5)	6 (1.4)	119 (27.5)	147 (34.0)	109 (25.2)	40 (9.3)	5 (1.2)	3 (0.7)	0 (0.0)	432 (100.0)



TABLE 68  
CROSS TABULATION OF ESTEEM NEED RESPONSES BY RESPONDENT'S AGE

AGE	NEED DEFICIENCY SCORE RESPONSES - ESTEEM													ROW TOTAL (%)
	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	
20-24							1	4	2	2				9 (2.1)
25-29							4	19	15	5	1			44 (10.2)
30-34						1	20	35	26	18	2	1		103 (23.9)
35-39					1		16	31	30	20	11	2		111 (25.8)
40-49							22	27	24	14	8	3		98 (22.7)
50-59							13	14	19	9	3	1		59 (13.7)
60 and over							2	2	1		2			7 (1.6)
COLUMN TOTAL (%)	0	0	0	0	1 (0.2)	1 (0.2)	78 (18.1)	132 (30.6)	117 (27.1)	68 (15.8)	27 (6.3)	7 (1.6)	0	431 (100.0)

TABLE 69  
CROSS TABULATION OF ESTEEM NEED RESPONSES BY RESPONDENT'S SEX

SEX	NEED DEFICIENCY SCORE RESPONSES - ESTEEM													ROW TOTAL (%)
	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	
Male					1	1	71	116	100	62	26	7		384 (88.9)
Female							8	16	17	6	1			48 (11.1)
COLUMN TOTAL (%)	0	0	0	0	1 (0.2)	1 (0.2)	79 (18.3)	132 (30.6)	117 (27.1)	68 (15.7)	27 (6.3)	7 (1.6)	0	432 (100.0)

TABLE 70

## CROSS TABULATION OF ESTEEM NEED RESPONSES BY RESPONDENT'S ETHNIC ORIGIN

ETHNIC ORIGIN	NEED DEFICIENCY SCORE RESPONSES - ESTEEM													ROW TOTAL (%)
	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	
Indian						1			3					4 (0.9)
Asian							5	5	2					12 (2.8)
Black							3	1	2	3				9 (2.1)
Hispanic							2	3	3	3	1			12 (2.8)
White					1		65	120	104	59	5			378 (87.5)
Other							4	3	3	3	2	2		17 (3.9)
COLUMN TOTAL (%)	0	0	0	0	1 (0.2)	1 (0.2)	79 (18.3)	132 (30.5)	117 (27.1)	68 (15.7)	27 (6.3)	7 (1.6)	0	432 (100.0)

TABLE 71  
CROSS TABULATION OF ESTEEM NEED RESPONSES BY RESPONDENT'S GS GRADE

GS GRADE	NEED DEFICIENCY SCORE RESPONSES - ESTEEM													ROW TOTAL (%)
	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	
5							1							1 (0.2)
7							7	18	7	4				36 (8.3)
9						1	6	10	12	5				34 (7.9)
11					1		27	51	35	21	6	1		142 (32.9)
12							13	25	30	18	12	1		99 (22.9)
13							12	21	23	13	8	5		82 (19.0)
14 or over							13	7	10	7	1			38 (8.8)
COLUMN TOTAL (%)	0	0	0	0	1 (0.2)	1 (0.2)	79 (18.3)	132 (30.6)	117 (27.1)	68 (15.7)	27 (6.3)	7 (1.6)	0	432 (100.0)

TABLE 72  
CROSS TABULATION OF ESTEEM NEED RESPONSES BY RESPONDENT'S FUNCTIONAL JOB TITLE

JOB TITLE	NEED DEFICIENCY SCORE RESPONSES - ESTEEM													ROW TOTAL (%)
	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	
Other							1		2		1			4 (0.9)
Auditor					1	1	42	74	61	38	9	1		227 (52.5)
Staff Auditor							9	18	7	5	2	2		43 (10.0)
Office Chief							9	13	12	2				36 (8.3)
Branch Chief							7	11	3	6				27 (6.3)
Division Chief							3	1	3		1			8 (1.9)
Supervisory Auditor							2	3	2	1				8 (1.9)
Audit Manager							6	12	27	16	14	4		79 (18.3)
COLUMN TOTAL (%)	0	0	0	0	1 (0.2)	1 (0.2)	79 (18.3)	132 (30.5)	117 (27.1)	68 (15.7)	27 (6.3)	7 (1.6)	0	432 (100.0)

TABLE 73

## CROSS TABULATION OF AUTONOMY NEED RESPONSES BY RESPONDENT'S AGE

AGE	NEED DEFICIENCY SCORE RESPONSES - AUTONOMY												ROW TOTAL (%)
	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6
20-24								5	3	1			9 (2.1)
25-29						1	13	19	6	3	2		44 (10.2)
30-34						1	29	36	24	10	3		103 (23.9)
35-39							17	40	30	14	8	2	111 (25.8)
40-49						2	29	26	20	17	3	1	98 (22.7)
50-59							13	20	13	10	3		59 (13.7)
60 and over							2	2	1		2		7 (1.6)
COLUMN TOTAL (%)	0	0	0	0	0	4 (0.9)	103 (23.9)	148 (34.3)	97 (22.5)	55 (12.8)	21 (4.9)	3 (0.7)	431 (100.0)

TABLE 74

CROSS TABULATION OF AUTONOMY NEED RESPONSES BY RESPONDENT'S SEX

SEX	NEED DEFICIENCY SCORE RESPONSES - AUTONOMY													ROW TOTAL (%)
	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	
Male						4	94	128	85	50	20	3		384 (88.9)
Female							10	20	12	5	1			48 (11.1)
COLUMN TOTAL (%)	0	0	0	0	0	4 (0.9)	104 (24.1)	148 (34.3)	97 (22.5)	55 (12.7)	21 (4.9)	3 (0.7)	0	432 (100.0)

TABLE 75  
CROSS TABULATION OF AUTONOMY NEED RESPONSES BY RESPONDENT'S ETHNIC ORIGIN

ETHNIC ORIGIN	NEED DEFICIENCY SCORE RESPONSES - AUTONOMY													ROW TOTAL (%)
	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	
Indian								1	2	1				4 (0.9)
Asian							6	4	2					12 (2.8)
Black								3	3	2	1			9 (2.1)
Hispanic							4	5	1	2				12 (2.8)
White						4	92	129	85	48	18	2		378 (87.5)
Other							2	6	4	2	2	1		17 (3.9)
COLUMN TOTAL (%)	0	0	0	0	0	4 (0.9)	104 (24.1)	148 (34.3)	97 (22.5)	55 (12.7)	21 (4.9)	3 (0.7)	0	432 (100.0)



TABLE 76

## CROSS TABULATION OF AUTONOMY NEED RESPONSES BY RESPONDENT'S GS GRADE

GS GRADE	NEED DEFICIENCY SCORE RESPONSES - AUTONOMY											ROW TOTAL (%)	
	-6	-5	-4	-3	-2	-1	0	1	2	3	4		5
5								1					1 (0.2)
7						11	20	2	1	2			36 (8.3)
9					1	7	14	6	5	1			34 (7.9)
11					2	32	53	31	16	8			142 (32.9)
12						22	31	31	11	4			99 (22.9)
13					1	17	19	17	19	6	3		82 (19.0)
14 or over						15	10	10	3				38 (8.8)
COLUMN TOTAL (%)	0	0	0	0	0	4 (0.9)	104 (24.1)	148 (34.3)	97 (22.5)	55 (12.7)	21 (4.9)	3 (0.7)	0 (100.0)

TABLE 77  
CROSS TABULATION OF AUTONOMY NEED RESPONSES BY RESPONDENT'S FUNCTIONAL JOB TITLE

JOB TITLE	NEED DEFICIENCY SCORE RESPONSES - AUTONOMY											ROW TOTAL (%)	
	-6	-5	-4	-3	-2	-1	0	1	2	3	4		5
Other						1	1	1	2				4 (0.9)
Auditor					2	57	85	48	25	10			227 (52.5)
Staff Auditor					1	6	20	5	8	2	1		43 (10.0)
Office Chief						10	16	7	2	1			36 (8.3)
Branch Chief						13	3	6	4	1			27 (6.3)
Division Chief						3	3	1	1				8 (1.9)
Supervisory Auditor						6	1	1					8 (1.9)
Audit Manager					1	8	19	27	15	7	2		79 (18.3)
COLUMN TOTAL (%)	0	0	0	0	0	4 (0.9)	104 (24.1)	148 (34.3)	97 (22.5)	55 (12.7)	21 (4.9)	3 (0.7)	0 432 (100.0)

TABLE 78

## CROSS TABULATION OF SELF-ACTUALIZATION NEED RESPONSES BY RESPONDENT'S AGE

NEED DEFICIENCY SCORE RESPONSES - SELF-ACTUALIZATION														ROW TOTAL (%)
AGE	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	
20-24								2	7					9 (2.1)
25-29							6	18	15	3	2			44 (10.2)
30-34							19	29	32	16	6	1		103 (23.9)
35-39					1	18	32	20	21	11	7	1		111 (25.8)
40-49							25	22	26	15	5	5		98 (22.7)
50-59							9	20	13	10	4	3		59 (13.7)
60 and over							1	4		1	1			7 (1.6)
COLUMN TOTAL (%)	0	0	0	0	0	1	78	127	113	66	29	16	1	431 (100.0)

TABLE 79

CROSS TABULATION OF SELF-ACTUALIZATION NEED RESPONSES BY RESPONDENT'S SEX

SEX	NEED DEFICIENCY SCORE RESPONSES - SELF-ACTUALIZATION													ROW TOTAL (%)
	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	
Male						1	69	114	94	60	29	16	1	384 (88.9)
Female							10	13	19	6				48 (11.1)
COLUMN TOTAL (%)	0	0	0	0	0	1 (0.2)	79 (18.3)	127 (29.4)	113 (26.2)	66 (15.3)	29 (6.7)	16 (3.7)	1 (0.2)	432 (100.0)

TABLE 80

## CROSS TABULATION OF SELF-ACTUALIZATION NEED RESPONSES BY RESPONDENT'S ETHNIC ORIGIN

ETHNIC ORIGIN	NEED DEFICIENCY SCORE RESPONSES - SELF-ACTUALIZATION												ROW TOTAL (%)
	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6
Indian									1	2	1		4 (0.9)
Asian						3	5	3	3	1			12 (2.8)
Black								2	5	1		1	9 (2.1)
Hispanic						3	1	5	5	2	1		12 (2.8)
White					1	70	115	94	59	26	12	1	378 (87.5)
Other						3	4	5	1	1	3		17 (3.9)
COLUMN TOTAL (%)	0	0	0	0	0	1 (0.2)	79 (18.3)	127 (29.4)	113 (26.2)	66 (15.3)	29 (6.7)	16 (3.7)	432 (100.0)

TABLE 81  
CROSS TABULATION OF SELF-ACTUALIZATION NEED RESPONSES BY RESPONDENT'S GS GRADE

GS GRADE	NEED DEFICIENCY SCORE RESPONSES - SELF-ACTUALIZATION													ROW TOTAL (%)
	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	
5								1						1 (0.2)
7							12	11	8	3	2			36 (8.3)
9							5	12	13	1	3			34 (7.9)
11						1	15	43	41	25	11	5	1	142 (32.9)
12							18	30	26	17	5	3		99 (22.9)
13							18	17	17	17	6	7		82 (19.0)
14 or over							11	13	8	3	2	1		38 (8.8)
COLUMN TOTAL (%)	0	0	0	0	0	1 (0.2)	79 (18.3)	127 (29.4)	113 (26.2)	66 (15.3)	29 (6.7)	16 (3.7)	1 (0.2)	432 (100.0)

TABLE 82  
CROSS TABULATION OF SELF-ACTUALIZATION NEED RESPONSES BY RESPONDENT'S FUNCTIONAL JOB TITLE

JOB TITLE	NEED DEFICIENCY SCORE RESPONSES - SELF-ACTUALIZATION													ROW TOTAL (%)
	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	
Other							1	2	1					4 (0.9)
Auditor						1	36	64	70	35	14	6	1	227 (52.5)
Staff Auditor							4	17	9	4	6	3		43 (10.0)
Office Chief							11	14	5	4	2			36 (8.3)
Branch Chief							8	9	3	6		1		27 (6.3)
Division Chief							3	2	2		1			8 (1.9)
Supervisory Auditor							2	4	2					8 (1.9)
Audit Manager							14	15	21	17	6	6		79 (18.3)
COLUMN TOTAL (%)	0	0	0	0	0	1 (0.2)	79 (18.3)	127 (29.4)	113 (26.2)	66 (15.3)	29 (6.7)	16 (3.7)	1 (0.2)	432 (100.0)

**APPENDIX D**  
**ORGANIZATIONAL DIAGNOSTIC ANALYSIS**



As an evaluation measure, the job satisfaction questionnaire provided for the measurement of organizational diagnostics as developed by Hackman (7:59). These measures are described as productivity, climate, management/supervision, autonomous control, supervisor assistance/feedback, and motivating potential score (MPS). The MPS provides a single index which summarizes the other measures and indicates the degree to which the characteristics of a job will support job enrichment activities (7:59-60).

#### The Measures

Productivity. Measured the quantity and quality of the output of the work group. The productivity score was computed by taking the arithmetic average of questions 39 and 40. The frequency of responses for this measure are in Table 83.

Climate. Relates to the individual's opinion in regard to the interest of the organization in its personnel and in the individual's attitude about working for the organization. The climate score was calculated by taking the arithmetic average of the responses to questions 41 and 42. The frequency of responses to this measure are in Table 84.

Management/Supervision. Equated to the individual's perceptions of managerial effectiveness, representation, responsibility, and the manager's ability to establish good work procedures and performance under pressure. The score for

management/supervision was computed by taking the arithmetic average of questions 35, 43, 44, 45, and 47. Table 85 provides the frequency of responses to this measure.

Autonomous Control. Evolves from the individual's perceptions in regard to their supervisor's abilities in providing directions, making decisions, emphasizing performance, and controlling task performance. The autonomous control score was the arithmetic average of the responses to questions 45, 48, 49 and 50. The frequency of responses to this measure are contained in Table 86.

Supervisor Assistance/Feedback. The supervisor assistance/feedback score is indicative of the individual's perceptions of management's level of encouragement in regard to seeking procedural improvements, improving performance, providing feedback on task completion, and setting goals. This score is the arithmetic average of questions 35, 51, 52 and the inverse of question 49. Table 87 provides the frequency of responses to this measure.

MPS. As described, this index provides a relative measure of the capacity of an organization to respond favorably to job enrichment activity. To obtain this index, skill variety (question 19), task identity (question 30), task significance (question 31), autonomy (question 14), and feedback (composite

of 65 and 66) were used. The formula utilized for computing MPS was (7:70):

$$\text{MPS} = \frac{\text{Skill Variety} + \text{Task Identity} + \text{Task Significance}}{3}$$

3

x Autonomy x Feedback

The frequency of responses by MPS (grouped) is contained in Table 88. Cross tabulations of MPS by demographic criteria (age, sex, ethnic origin, GS grade, and functional job title) are contained in Tables 89 through 93.

#### The Profiles

The climate/productivity profile is provided at Figure 10. This profile is on a scale that ranges from 1 (minimum) to 7 (maximum), and suggests that the civilian auditor perceive their productivity and the organization's climate at relatively moderate levels.

The managerial style profile is provided at Figure 11. This profile suggests that AFAA civilian auditors perceive the managerial effectiveness of AFA management to be at a relatively moderate level.

The job diagnostic profile is contained in Figure 9. The motivating potential score (MPS) of 108 is slightly below the "average" score of 125 (7:61). This suggests that any attempt to provide for job enrichment should be approached cautiously as opposed to dramatic changes (7:62).

TABLE 83

PRODUCTIVITY RESPONSE FREQUENCY

<u>SCORE</u>	<u>ABSOLUTE FREQUENCY</u>	<u>RELATIVE FREQUENCY (%)</u>	<u>CUMULATIVE FREQUENCY (%)</u>
0	3	.7	.7
1	9	2.1	2.8
2	20	4.6	7.4
3	55	12.7	20.1
4	67	15.5	35.6
5	88	20.4	56.0
6	118	27.3	83.3
7	72	16.7	100.0
	<hr/>	<hr/>	
TOTAL	432	100.0	
	=====	=====	

Score of zero (0), represents a missing case.

TABLE 84

CLIMATE RESPONSE FREQUENCY

<u>SCORE</u>	<u>ABSOLUTE FREQUENCY</u>	<u>RELATIVE FREQUENCY (%)</u>	<u>CUMULATIVE FREQUENCY (%)</u>
1	20	4.6	4.6
2	31	7.2	11.8
3	63	14.6	26.4
4	88	20.4	46.8
5	75	17.4	64.1
6	93	21.5	85.6
7	62	14.4	100.0
TOTAL	432	100.0	
	-----	-----	

TABLE 85

MANAGEMENT/SUPERVISION RESPONSE FREQUENCY

<u>SCORE</u>	<u>ABSOLUTE FREQUENCY</u>	<u>RELATIVE FREQUENCY (%)</u>	<u>CUMULATIVE FREQUENCY (%)</u>
0	1	.2	.2
1	16	3.7	3.9
2	35	8.1	12.0
3	49	11.3	23.4
4	86	19.9	43.3
5	85	19.7	63.0
6	96	22.2	85.2
7	64	14.8	100.0
	<hr/>	<hr/>	
TOTAL	432	100.0	
	-----	-----	

Score of zero (0), represents a missing case.

TABLE 86

AUTONOMOUS CONTROL RESPONSE FREQUENCY

<u>SCORE</u>	<u>ABSOLUTE FREQUENCY</u>	<u>RELATIVE FREQUENCY (%)</u>	<u>CUMULATIVE FREQUENCY (%)</u>
1	15	3.5	3.5
2	31	7.2	10.5
3	85	19.7	30.3
4	143	33.1	63.4
5	109	25.2	88.7
6	38	8.8	97.5
7	11	2.5	100.0
	<hr/>	<hr/>	
TOTAL	432	100.0	
	-----	-----	

TABLE 87

SUPERVISOR ASSISTANCE RESPONSE FREQUENCY

<u>SCORE</u>	<u>ABSOLUTE FREQUENCY</u>	<u>RELATIVE FREQUENCY (%)</u>	<u>CUMULATIVE FREQUENCY (%)</u>
1	2	.5	.5
2	18	4.2	4.6
3	65	15.0	19.7
4	85	19.9	39.6
5	100	23.1	62.7
6	113	26.2	88.9
7	48	11.1	100.0
TOTAL	432	100.0	
	=====	=====	



TABLE 88

MOTIVATING POTENTIAL SCORE RESPONSE FREQUENCY

<u>SCORE</u>	<u>ABSOLUTE FREQUENCY</u>	<u>RELATIVE FREQUENCY (%)</u>	<u>CUMULATIVE FREQUENCY (%)</u>
Under 49	52	12.0	12.0
49-98	114	26.4	38.4
99-147	118	27.3	65.7
148-196	75	17.4	83.1
197-245	43	10.0	93.1
246-294	23	5.3	98.4
295-343	7	1.6	100.0
TOTAL	432	100.0	
	-----	-----	

TABLE 89

## CROSS TABULATION OF MPS RESPONSES BY RESPONDENT'S AGE

AGE	MPS RESPONSES							ROW TOTAL (%)
	Under 49	49-98	99-147	148-196	197-245	246-294	295-343 (MAX)	
20-24	2	5	1	1				9 (2.1)
25-29	5	12	8	5	8	5	1	44 (10.2)
30-34	29	21	19	17	12	3	2	103 (23.9)
35-39	25	35	21	17	8	5		111 (25.8)
40-49	26	22	13	14	15	8		98 (22.7)
50-59	14	12	11	9	5	3	5	59 (13.7)
60 and over	3	1	1		2			7 (1.6)
COLUMN TOTAL (%)	104 (24.1)	108 (25.1)	74 (17.2)	63 (14.6)	50 (11.6)	24 (5.6)	8 (1.9)	431 (100.0)

TABLE 90  
CROSS TABULATION OF MPS RESPONSES BY RESPONDENT'S SEX

SEX	MPS RESPONSES						ROW TOTAL (%)
	Under 49	49-98	99-147	148-196	197-245	246-294	295-343 (MAX)
MALE	91	94	66	60	46	21	6
							384 (88.9)
FEMALE	13	14	8	4	4	3	2
							48 (11.1)
COLUMN TOTAL (%)	104 (24.1)	108 (25.0)	74 (17.1)	64 (14.8)	50 (11.6)	24 (5.6)	8 (1.9)
							432 (100.0)

TABLE 91

## CROSS TABULATION OF MPS RESPONSES BY RESPONDENT'S ETHNIC ORIGIN

ETHNIC ORIGIN	MPS RESPONSES							ROW TOTAL (%)
	Under 49	49-98	99-147	148-196	197-245	246-294	295-343 (MAX)	
Indian		3			1			4 (0.9)
Asian	1	3	3	2	2		1	12 (2.8)
Black	2	2	1	3		1		9 (2.1)
Hispanic	4	4	1		2	1		12 (2.8)
White	93	93	67	57	45	18	5	378 (87.5)
Other	4	3	2	2		4	2	17 (3.9)
COLUMN TOTAL (%)	104 (24.1)	108 (25.0)	74 (17.1)	64 (14.8)	50 (11.6)	24 (5.6)	8 (1.9)	432 (100.0)

TABLE 92

## CROSS TABULATION OF MPS RESPONSES BY RESPONDENT'S GS GRADE

GS GRADE	MPS RESPONSES						ROW TOTAL (%)
	Under 49	49-98	99-147	148-196	197-245	246-294	295-343 (MAX)
5				1			1 (0.2)
7	6	11	3	5	4	6	1 36 (8.3)
9	5	8	7	5	6	3	34 (7.9)
11	39	33	32	21	12	5	142 (32.9)
12	24	30	11	14	14	3	99 (22.9)
13	19	22	13	14	9	4	1 82 (19.0)
14 or over	11	4	8	4	5	3	3 38 (8.8)
COLUMN TOTAL (%)	104 (24.1)	108 (25.0)	74 (17.1)	64 (14.8)	50 (11.6)	24 (5.6)	8 (1.9) 432 (100.0)

TABLE 93

## CROSS TABULATION OF MPS RESPONSES BY RESPONDENT'S FUNCTIONAL JOB TITLE

JOB TITLE	MPS RESPONSES							ROW TOTAL (%)
	Under 49	49-98	99-147	148-196	197-245	246-294	295-343 (MAX)	
Other	1	1		1			1	4 (0.9)
Auditor	53	62	43	31	22	14	2	227 (52.5)
Staff Auditor	11	9	9	5	5	2	2	43 (10.0)
Office Chief	6	6	6	8	7	1	2	36 (8.3)
Branch Chief	6	7	6	4	3	1		27 (6.3)
Division Chief	2			1	1	3	1	8 (1.9)
Supervisory Auditor	2	1	1	2	2			8 (1.9)
Audit Manager	23	22	9	12	10	3		79 (18.3)
COLUMN TOTAL (%)	104 (24.1)	108 (25.0)	74 (17.1)	64 (14.8)	50 (11.6)	24 (5.6)	8 (1.9)	432 (100.0)

FIGURE 9

AFAA CIVILIAN JOB DIAGNOSTIC PROFILE

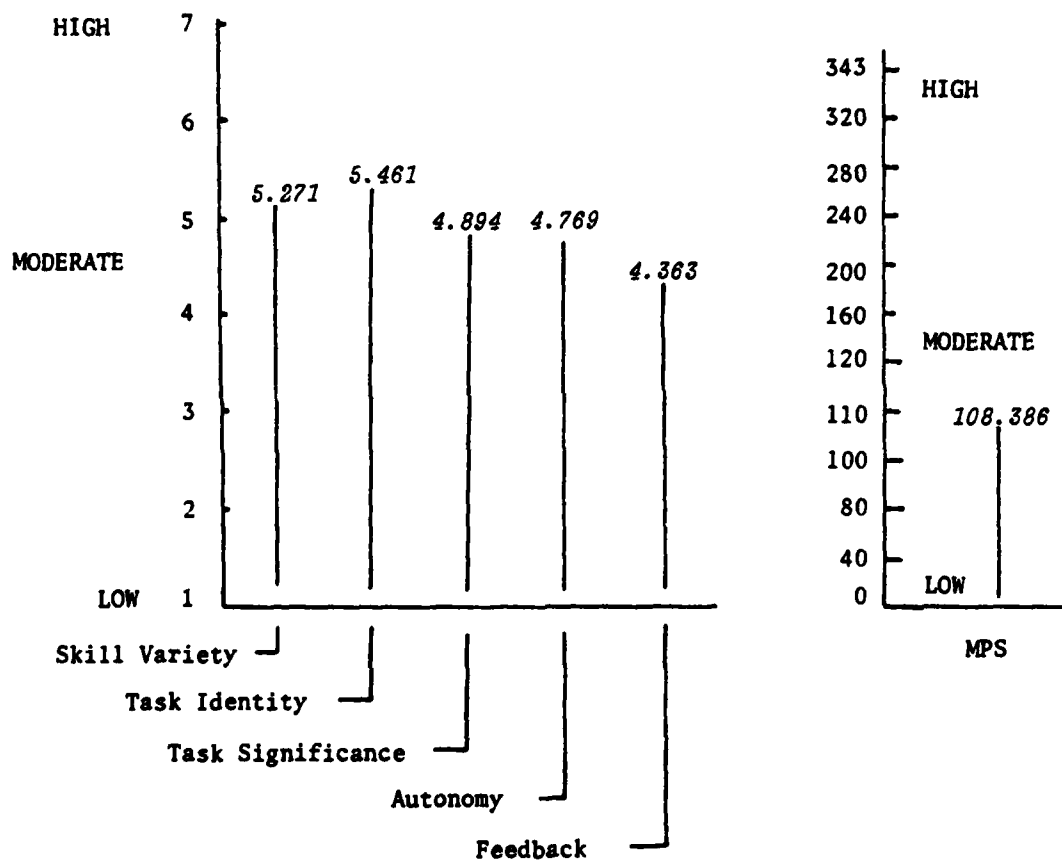


FIGURE 10

AFAA CLIMATE/PRODUCTIVITY PROFILE

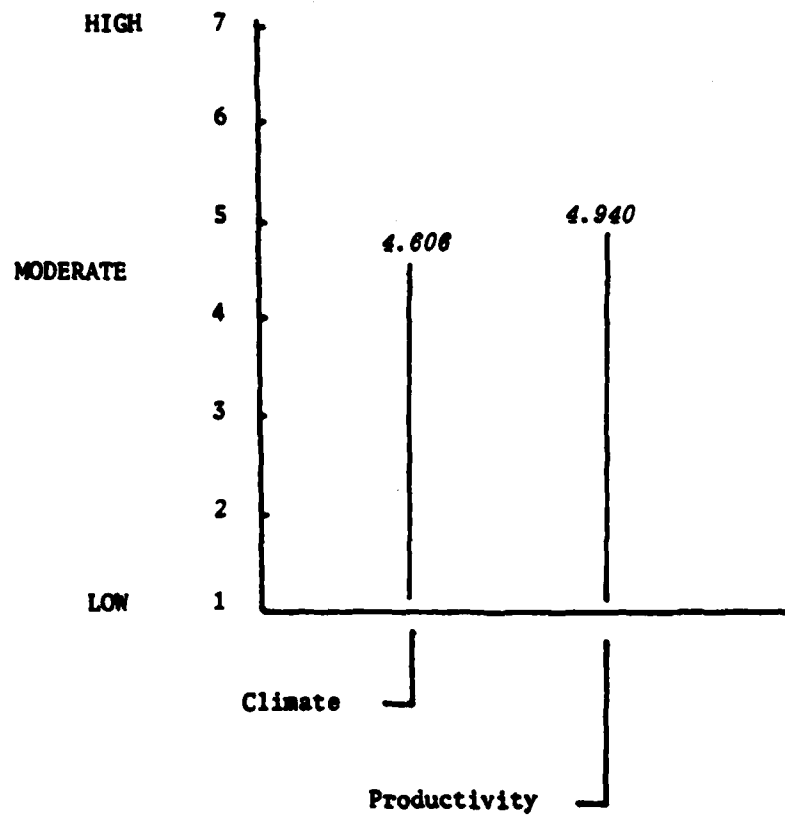
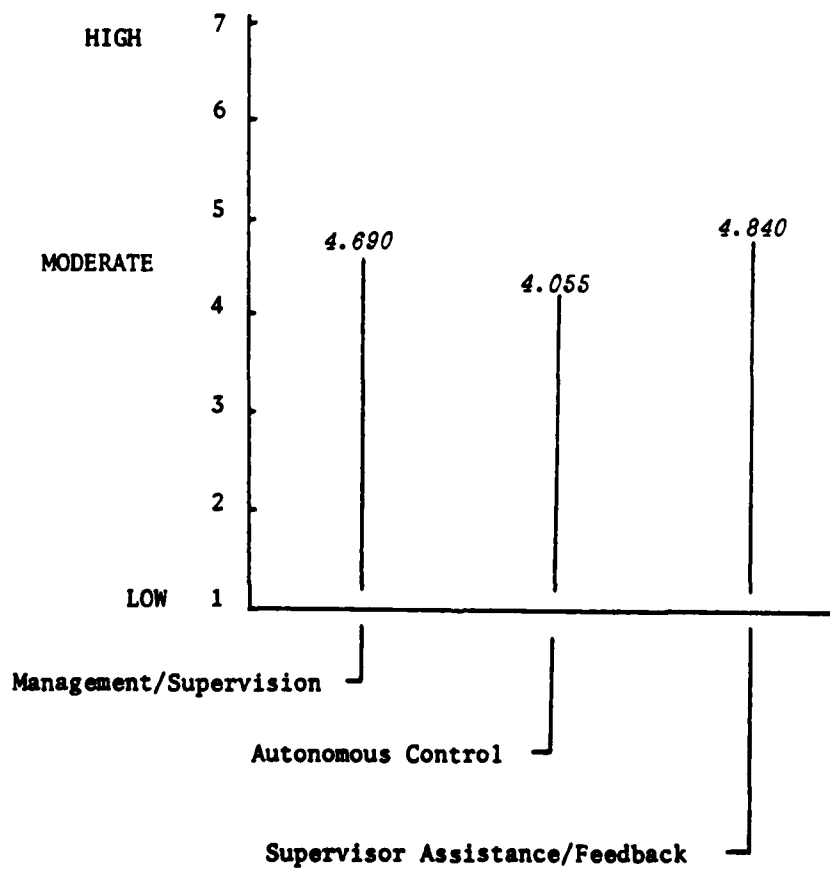




FIGURE 11

AFAA MANAGERIAL STYLE PROFILE



**SELECTED BIBLIOGRAPHY**

#### A. REFERENCES CITED

1. Amernic, Joel H., Nissim Aranya and Jerome Pollock. "How Typical is the Typical CA?", CA Magazine, October 1979, pp. 38-42.
2. Blackburn, Major Ronald L., USAF, and Captain Randall L. Johnson, USAF. "Turnover of Junior Officers." Unpublished master's thesis. LSSR 5-78B, AFIT/SL, Wright-Patterson AFB OH, September 1980. AD A059297
3. Carrell, Michael, and Archie Faircloth. "Evaluating Personnel Procedures in CPA Firms." Journal of Accountancy, October 1978, pp. 38-48.
4. Clancy, Donald K., Frank Collins, and Selimo C. Rael. "Some Behavioral Perceptions of Internal Auditing." The Internal Auditor, June 1980, pp. 44-52.
5. Emory, C. William. Business Research Methods, rev. ed. Homewood, IL: Richard D. Irwin, 1980.
6. Gulick, Captain Clyde E., USAF, and Major Henry E. Laakman, Jr., USAF. "An Analysis of Factors Influencing the Turnover of United States Air Force Pilots in the Six to Eleven Year Group." Unpublished master's thesis. LSSR 4-80, AFIT/SL, Wright-Patterson AFB OH, June 1980. AD A087084.
7. Hackman, J. Richard, Greg Oldham, Robert Janson, and Kenneth Purdy. "A New Strategy for Job Enrichment." California Management Review, Summer 1975, pp. 57-71.
8. Hart, George E. "What Really Matters?" The Internal Auditor, October 1976, pp. 54-57.
9. Hendrix, Lieutenant Colonel William H., USAF, and Airman First Class Vicki B. Halverson, USAF. "Organizational Survey Assessment Package for Air Force Organizations." Unpublished research report No. AFHRL-TR 78-93, Occupational and Manpower Research Division, Brooks AFB TX, 1979.
10. Hull, C. Hadlai, and Norman H. Nie. SPSS Update. New York: McGraw-Hill Book Company, 1979.
11. Hyde, Gerald E. "Role Models for Internal Auditing." The Internal Auditor, April 1980, pp. 65-72.

12. Maslow, A. H. "A Theory of Human Motivation." Psychological Review 50, 1943, pp. 370-396.
13. Moch, Michael K. "Racial Differences in Job Satisfaction: Testing Four Common Explanations." Journal of Applied Psychology, Vol. 65, No. 3 (1980), pp. 299-306.
14. Nie, Norman H., and others. Statistical Package for the Social Sciences, 2d ed. New York: McGraw-Hill Book Company, 1975.
15. Plane, Donald R., and Edward B. Oppermann. Statistics for Management Decisions. Dallas, TX: Business Publications, 1977.
16. Porter, Lyman W., and Edward E. Lawler III. Managerial Attitudes and Performance. Homewood, IL: Richard D. Irwin, 1968.
17. \_\_\_\_\_ and Richard M. Steers. "Organizational, Work and Personal Factors in Employee Turnover and Absenteeism." Psychological Bulletin, Vol. 80, No. 2 (1973), pp. 151-176.
18. \_\_\_\_\_, Richard M. Steers, and others. "Organizational Commitment, Job Satisfaction and Turnover Among Psychiatric Technicians." Journal of Applied Psychology, Vol. 59, No. 5 (1974), pp. 603-609.
19. Price, James L. The Study of Turnover. Ames, Iowa: The Iowa State University Press, 1977.
20. Rummel, R. J. "Understanding Factor Analysis." Conflict Resolution, Vol XI, No. 4 (1967), pp. 444-477.
21. Smith, John H., and Wilfred C. Uecker. "Can Internal Auditors Find Job Satisfaction?" The Internal Auditor, October 1976, pp. 48-53.
22. Tuttle, Thomas C., Joe T. Hazel. "Review and Implications of Job Satisfaction and Work Motivation Theories for Air Force Research." Unpublished research report. AFHRL-TR-73-56. Occupational Research Division, Lackland AFB TX, 1974.
23. Weaver, Charles N. "Job Satisfaction in the United States in the 1970s." Journal of Applied Psychology, Vol. 65, No. 3 (1980), pp. 364-367.

## B. RELATED SOURCES

- Anthony, Robert N., and Regina E. Herzlinger. Management Control in Nonprofit Organizations. Homewood IL: Richard D. Irwin, Inc., 1975.
- Carmichael, D. R. "The Auditor's Role and Responsibility," Journal of Accountancy, August 1977, pp. 55-60.
- Chenok, Philip B., Douglas R. Carmichael, and Thomas P. Kelly. "Accounting and Auditing: The Technical Challenges Ahead," Journal of Accountancy, November 1980, pp. 62-70.
- Edwards, James B. "Creativity and the Internal Auditor," The Internal Auditor, May/June 1973, pp. 44-56.
- Herzberg, Frederick. Work and the Nature of Man. New York: World Publishing, 1971.
- \_\_\_\_\_. The Managerial Choice. Homewood, IL: Dow Jones - Irwin, 1976.
- \_\_\_\_\_, Bernard Mausner, and Barbara Block Snyderman. The Motivation to Work. 2d ed., New York: John Wiley & Sons, Inc., 1967.
- Katz, Daniel, and Robert L. Kahn. The Social Psychology of Organizations. New York: John Wiley & Sons, 1966.
- Kotter, John P., and Leonard A. Schlesinger. "Overcoming Fear of Change: A Professional Approach," Journal of Accountancy, February 1980, pp. 33-44.
- Litwin, George H., and Robert A. Stringer, Jr. Motivation and Organizational Climate. Boston: Division of Research, Graduate School of Business Administration, Harvard University, 1974.
- Maslow, A. H. Motivation and Personality. New York: Harper and Brothers, 1954.
- Mosher, Charles D., and William F. Laurie. "Improve Your Creativity," Journal of Accountancy, September 1977, pp. 108-110.
- Sawyer, Lawrence B. "Janus or the Internal Auditor's Dilemma," The Internal Auditor, December 1980, pp. 19-27.
- Vroom, Victor H. Work and Motivation. New York: John Wiley & Sons, Inc., 1964.

# THESIS PUBLICATION/DISTRIBUTION CATEGORY AND STATEMENT

DIRECTIONS FOR THESIS CHAIRMAN: This form, which governs distribution of the thesis, will be retained with the archive copy. Provide the general information. Designate the distribution category (I or II) and, if applicable, the distribution statement (A or B). If appropriate, indicate the number and recipients of courtesy copies.

GENERAL INFORMATION: Thesis Number: LSSR 5-81 Survey Control Number SCN 81-47  
(if applicable)

Thesis Title: JOB SATISFACTION AND CIVILIAN AUDITOR TURNOVER  
WITHIN THE AIR FORCE AUDIT AGENCY

Thesis Authors: George E. Hanby, GS-12  
Bruce K. Zimmerman, GS-12

CATEGORY I, STATEMENT A: Publish and distribute under the provisions of Statement A, unlimited distribution by DDC (AFR 30-43, 26 Mar 1971) and DLSIE. DDC & DLSIE will release the document to non-DOD agencies, interested individuals and foreign governments.



CATEGORY I, STATEMENT A, PUBLICATION/DISTRIBUTION STATEMENT: The contents of the document are technically accurate, and no sensitive items, detrimental ideas, or delictious information are contained therein. Furthermore, the views expressed in the document are those of the author and do not necessarily reflect the views of the School of Systems and Logistics, the Air University, the United States Air Force, or the Department of Defense.

Signed

William H. Mendenhall  
Thesis Chairman

June 81  
Date

CATEGORY I, STATEMENT B: Publish and distribute under the provisions of Statement B, distribution limited to U.S. Gov't agencies only by DDC (AFR 30-43, 26 Mar 1971) and DLSIE.



CATEGORY I, STATEMENT B, PUBLICATION/DISTRIBUTION STATEMENT: The contents of the document are technically accurate, and no detrimental ideas or delictious information are contained therein. Furthermore, the views expressed in the document are those of the author and do not necessarily reflect the views of the School of Systems and Logistics, the Air University, the United States Air Force, or the Department of Defense.

Signed

\_\_\_\_\_  
Thesis Chairman

\_\_\_\_\_  
Date

CATEGORY II: Not to be distributed through interlibrary loan or published through DDC or DLSIE. The reason(s) for this classification:



- ☐ Academic and/or design weakness.
- ☐ Sensitive and/or unsupported conclusions.
- ☐ Primarily for internal use and of little or no interest to DOD or professional agencies. (Example: Institutional Research)
- ☐ Part of an ongoing research project. Project results will be published later.

CATEGORY II, PUBLICATION/DISTRIBUTION STATEMENT: The views expressed in this document are those of the author and do not necessarily reflect the views of the Thesis Chairman, the School of Systems and Logistics, the Air University, the United States Air Force or the Department of Defense.

Signed

\_\_\_\_\_  
Thesis Chairman

\_\_\_\_\_  
Date

COURTESY COPY OPTION: One copy should be forwarded to the sponsoring agency of the research topic. In those cases where the topic was not sponsored, the authors may elect the DOD agency which provided the principle support for the research effort. Not more than one (1) courtesy copy will be distributed to any one office or agency. No more than two courtesy copies will be distributed. EACH STUDENT AND ADVISOR WILL AUTOMATICALLY RECEIVE A COURTESY COPY. DO NOT LIST COPIES FOR STUDENTS/ADVISOR.

<u>NAME OF INDIVIDUAL</u>	<u>COMMAND/SYMBOL</u>	<u>TITLE, ADDRESS &amp; ZIP</u>
Mr. J.H. Stolarow	Auditor General	AFAA, Norton AFB CA 92409
LTC J.B. Lovell	Director of Personnel	AFAA, Norton AFB CA 92409

PLEASE PROVIDE BELOW THE ADDRESS TO WHICH YOU WANT YOUR COPY OF THE THESIS FORWARDED  
(ONE COPY PER AUTHOR):

		<u>FOR OFFICE USE ONLY</u>
(1) Bruce K. Zimmerman	_____	
	(Name)	
4951 Pepperwood Dr.	_____	
	(Street Address)	(Date Mailed)
Dayton, OH 45424	_____	
	(City, State and Zip Code)	
(2) George E. Hanby	_____	
	(Name)	
2110 Knoll Dr.	_____	
	(Street Address)	(Date Mailed)
Dayton, OH 45431	_____	
	(City, State and Zip Code)	
(3) _____	_____	
	(Name)	
_____	_____	
	(Street Address)	(Date Mailed)
_____	_____	
	(City, State and Zip Code)	

END

DATE  
FILMED

1-82

DTIC